Hands-on experience with SAP Enterprise Threat Detection, cloud edition

Exercise: Working with SAP Enterprise Threat Detection Version

Based on SAP Enterprise Threat Detection, cloud edition, Version November 2025

Get Hands-On with the New *SAP Enterprise Threat Detection, cloud edition*

Contents

Overview & Touring SAP Enterprise Threat Detection, public cloud

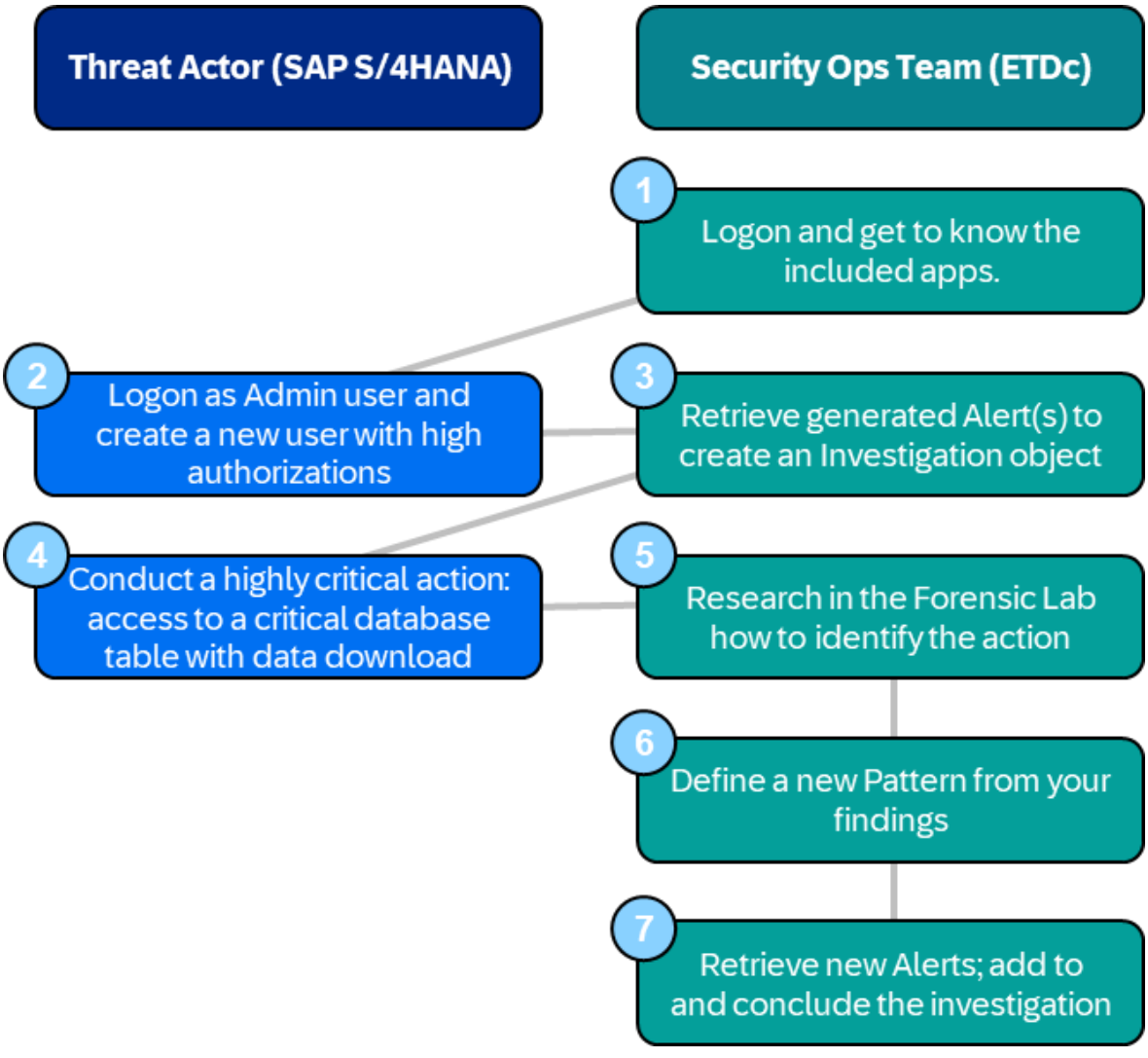
In this hands-on session and workshop of about 1.5 – 2h, you will get to know the basic functioning of *SAP Enterprise Threat Detection, public cloud*, including the terminology employed.

You will switch back and forth between 3 roles. In a first role, you will be a (potential) threat actor in an SAP S/4HANA system and conduct actions resulting in system responses in *SAP Enterprise Threat Detection, public cloud*.

In a second role, you will act as a security specialist in charge to identify potential threats, pin down what has happened and determine the relevance, as well as ensure that the knowledge about the attack vector is added to the repository on which *SAP Enterprise Threat Detection, public cloud* will automatically alert going forward.

In a 3rd role, you will act as a consumer/processor of the results (Investigation Report), that was created by you in your second role as a security specialist.

Here's the flow of the following exercises in your roles as threat actor and security specialist (the numbers relate to the chapters in this document:



Chapters 1 to 7 are related to these to roles. Chapter 8 is related to the consumer/processor role

1. Logon to the Monitoring Console of SAP Enterprise Threat Detection, public cloud

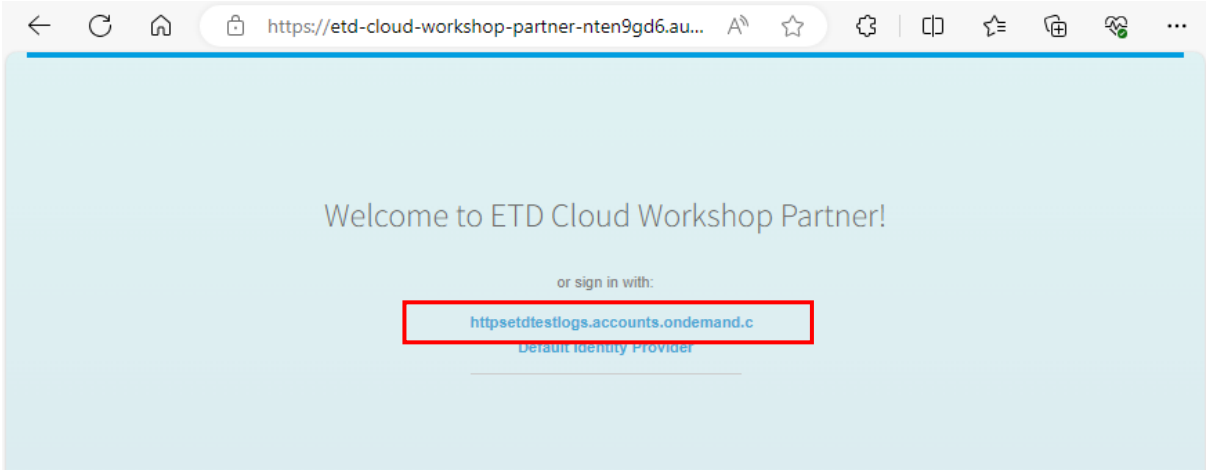
This system & credentials are available during the planned workshop hours only.

Please let us know if you'd like to have access afterwards; we're happy to check how long we can extend your access.

Access the *SAP Enterprise Threat Detection, public cloud* monitoring console

IMPORTANT:

- You should get the below start page (if not, please empty your browser cache and try again).
- Here, select the first entry ("httpsetdtestlogs.accounts.ondemand") to log on with the generic workshop users below (not any personal credentials – they won't be recognized in this cloud application).
  Do **NOT** choose the "Default Identity Provider" (here, the generic users won't work).



In the ensuing (logon) screen, use the ID indicated to you (01-35; afterwards referred to as "##").

User: teched##@etdsap.com

Password: will be provided in the session

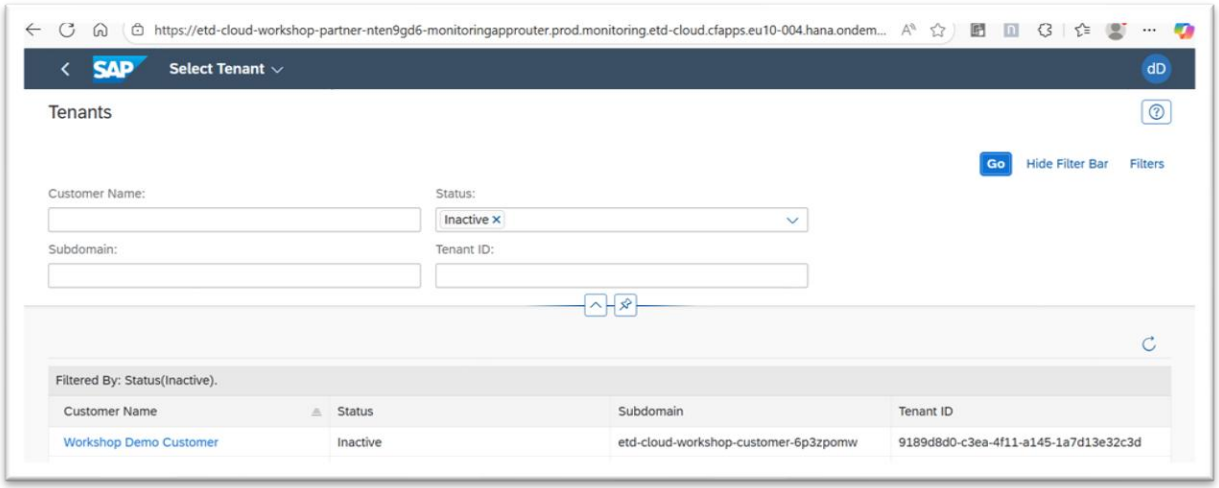
If you inadvertently lock the password, please notify the instructor.

If you receive a blank screen saying "Where to", please clear the cache, then close and restart the browser. If you may also open an private browsing window (often "incognito" or "InPrivate"). Log on again.

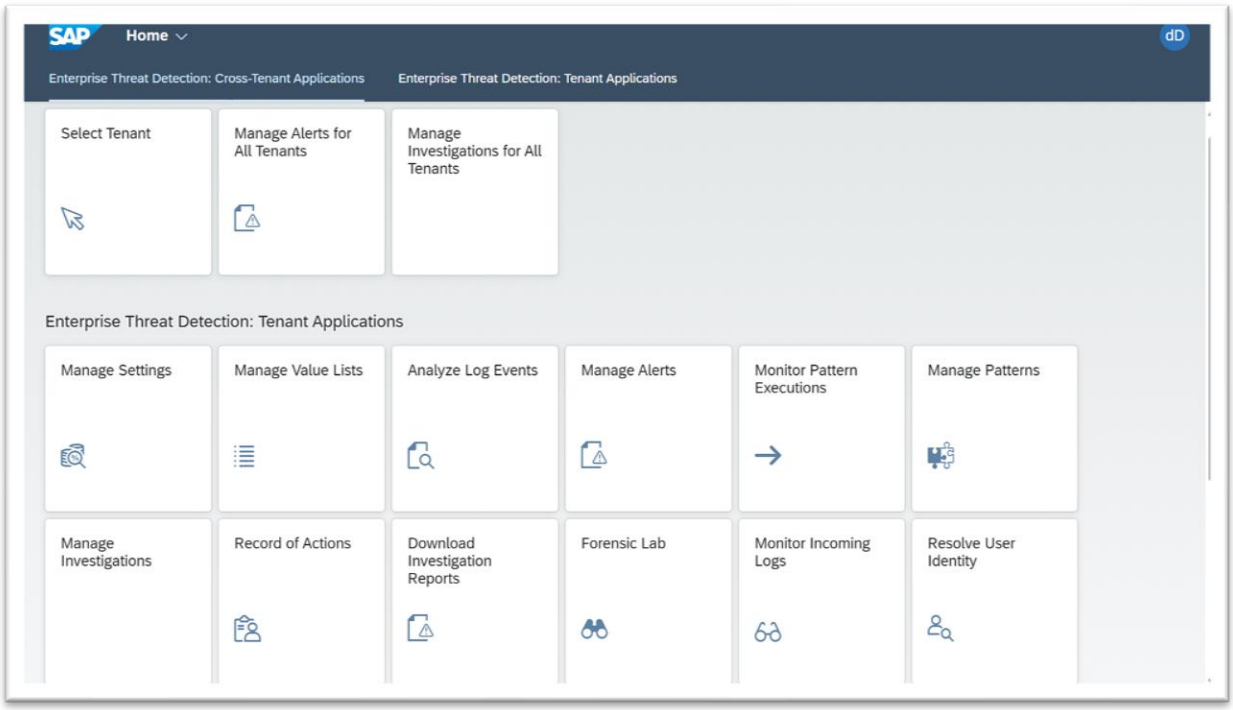
Upon initial logon, In case you get pop-up message to select a Tenant, than click the Select Tenant screen for selecting a specific Tenant:

As a monitoring agent providing services to multiple clients, you will log on to your organization's own productive Tenant; however from here commonly access and work in the specific Tenant of a client, which you can select from this list reflecting all clients/Tenants linked to your organization.

For this hands-on there is only one customer system linked. Click on the blue hyperlink and select "Workshop Demo Customer".

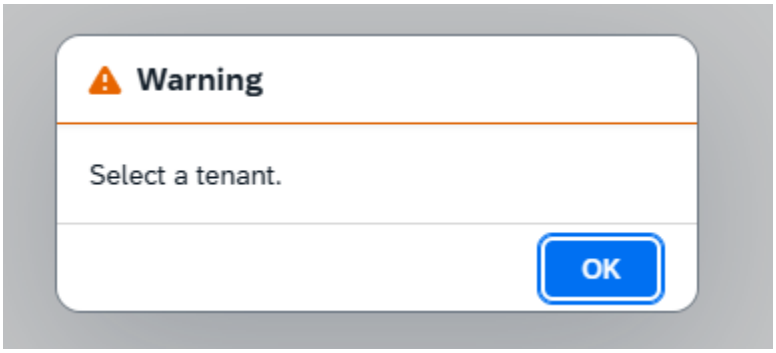


You will then see the *SAP Enterprise Threat Detection, public cloud* monitoring console. Take a bit of time to check by a few apps and how they behave.



1.1 Got a Warning ‘Select a Tenant’

If you encounter a the warning popup

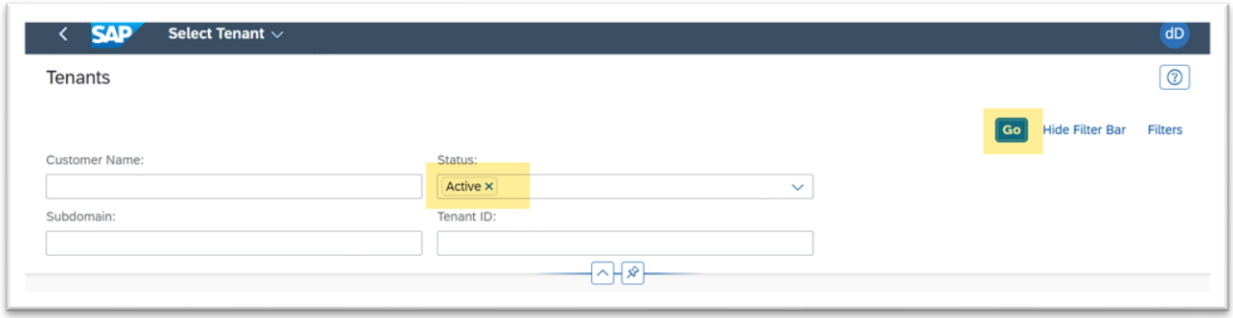


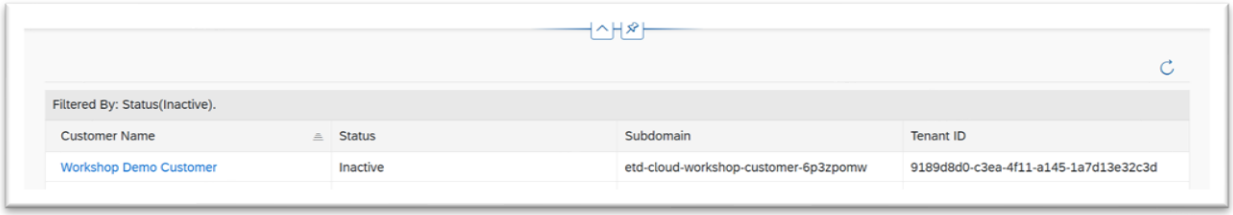
the system has lost the information which Tenant you’ve been working on (most likely you had been logged out).

In this case, either start the *SAP Enterprise Threat Detection, public cloud* console again via the above link.

Alternatively, you can manually set the correct tenant:

- In the section for “Cross-Tenant Applications”, open the app “Select Tenant”.
- Remove filters “active” and press “go”.
- The entry “Workshop Demo Customer” will show; select this so the system is aware which Tenant you are working on – which is relevant in case you’re a partner providing monitoring services to multiple clients)





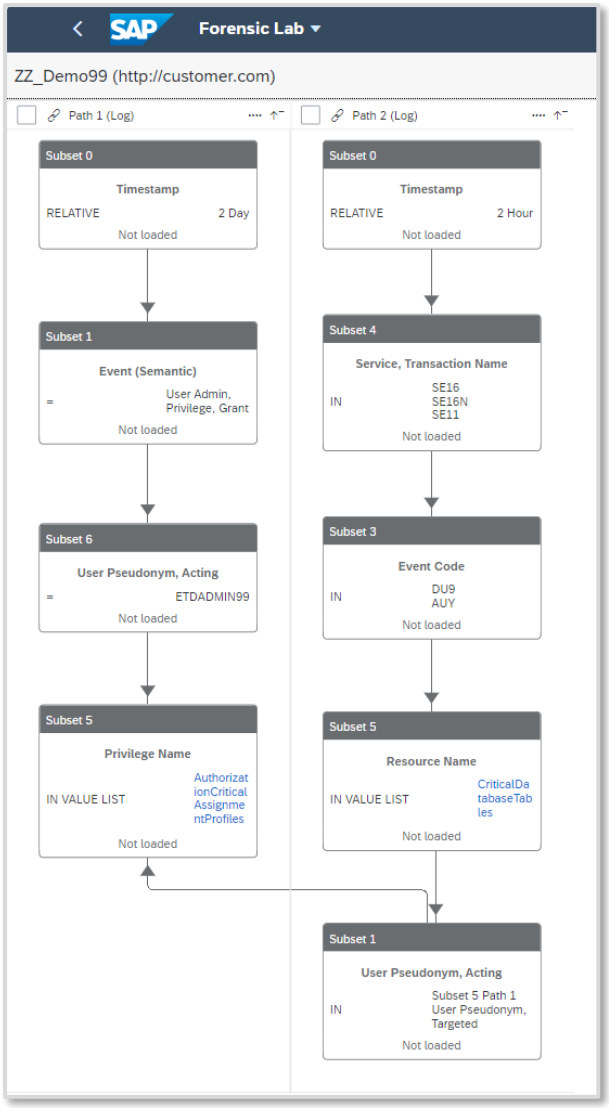
The Forensic Lab is the area where you work on ways to identify new potential threat vectors by filtering your way through the large volume of log entries until you arrive at a definition yielding few and specific logs that should point at a real threat.

Here, we will build a workspace with filters capable of identifying the case where a user is granted high authorizations, and then accesses a critical resource.

To this end, we will be building two filtering Paths linked by a Reference:

- “Path 1” should be capable of establishing a list of users who have been granted critical authorizations in the past 2 days.
- “Path 2” to the right shall be able to establish a list of all users who have accessed a critical resource recently.
- The “Reference” allows to single out users which are in the result lists of both paths.

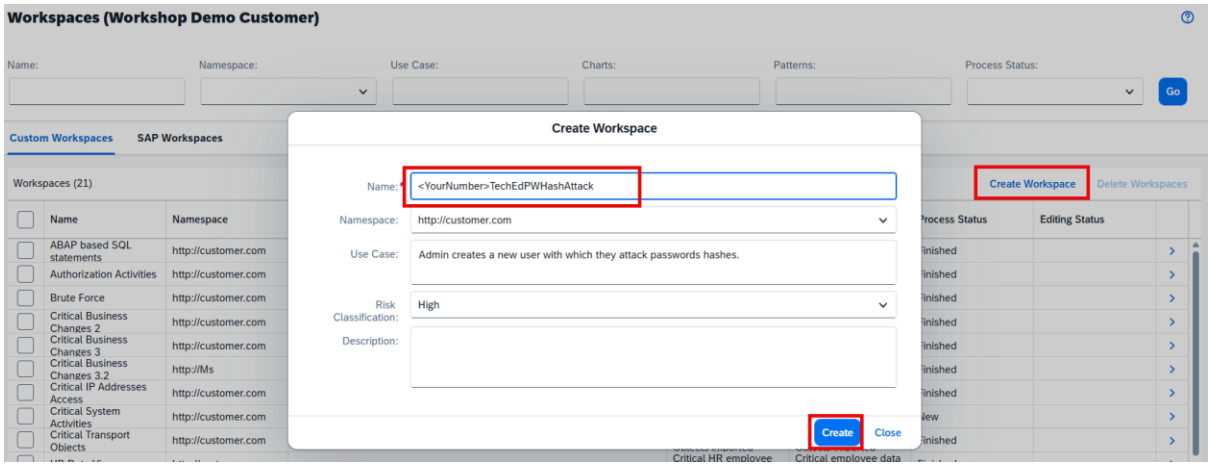
The Workspace will look similar like this one:



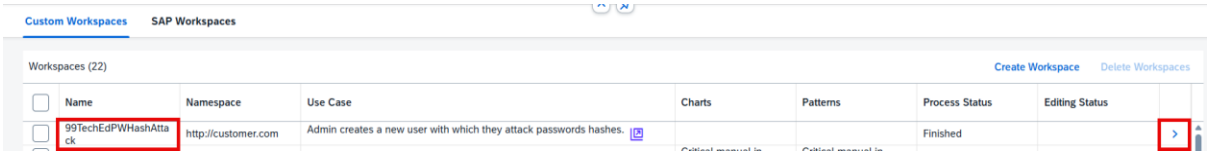
5.1 Build up a Workspace

- Return to the monitoring console of SAP Enterprise Threat Detection, cloud edition.
- Go to the app “Forensic Lab”.

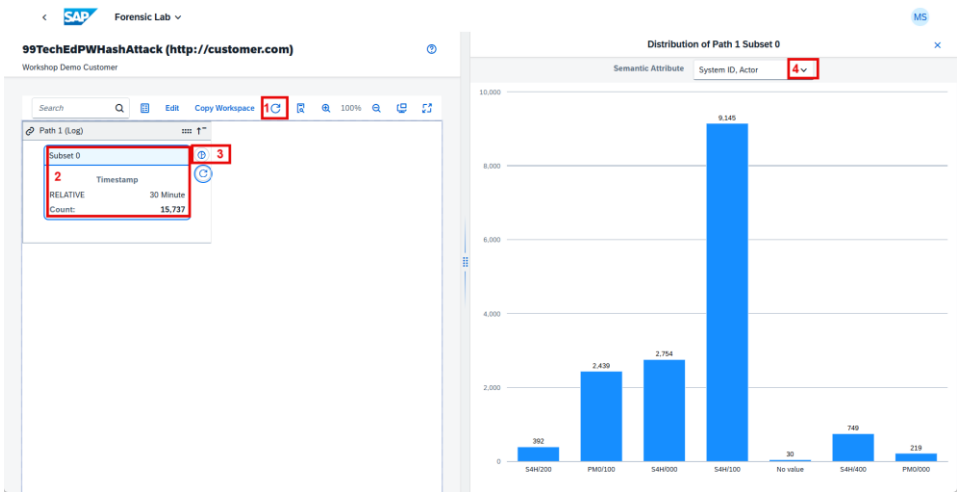
- In the area “Custom Workspaces”, you see a list of existing workspaces.
- Create a new Workspace with Name ##TechEdPWHashAttack, by replacing the ## with your participant number. Enter some additional information (Use case, Severity, Description), and then click on ‘Create’



- You then see your new Workspace in the Workspace list. To open it, click on the arrow on the right for your Workspace.

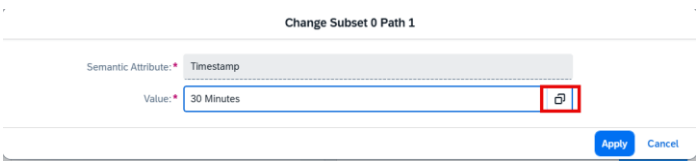


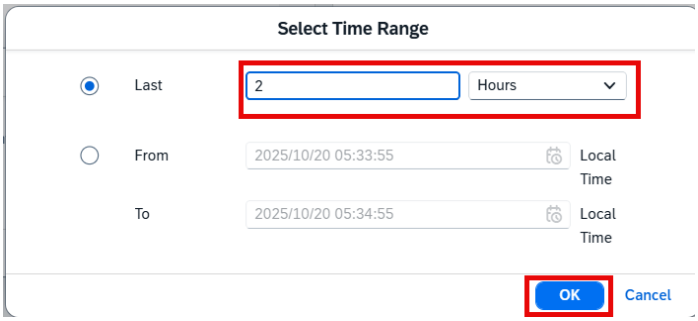
- Your new workspace contains already a first Filter Path (Path 1) with a subset (Subset 0) to filter on the time range.
- Click on the 'Refresh' Button ↻ to see incoming log data.
- Click into the Subset 0, to get some Symbols at the right
- Click into the Pi-Chart Symbol to view the data in a chart preview. You see as a default the distribution of log events, related to their systems
- By clicking on the Drop-Down-Symbol, you can select other attributes of the ETD normalized Data Model

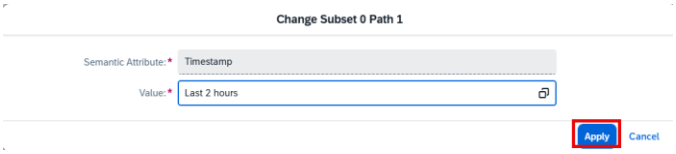


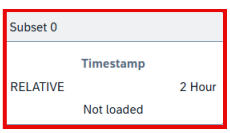
By e.g. selecting 'Event (Semantic)' you get a distribution of all log events, related to the Semantic Events.

- By clicking the 'Edit' Button Edit, you start modelling your workspace. You see now some additional Symbols at the right of your Subset 0.
- Change the relative Timestamp of Subset 0 to 2 hours by clicking on the symbol 'Edit Subset'

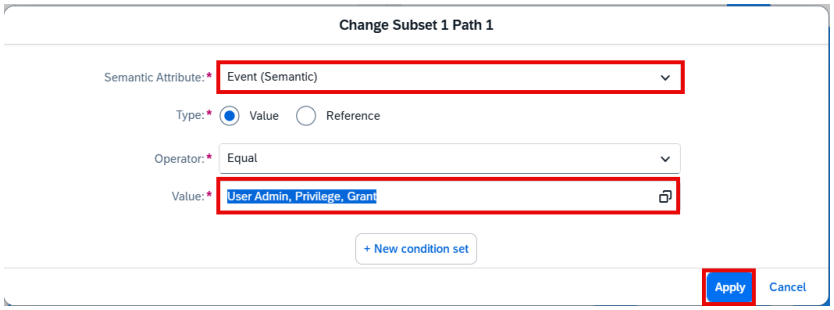




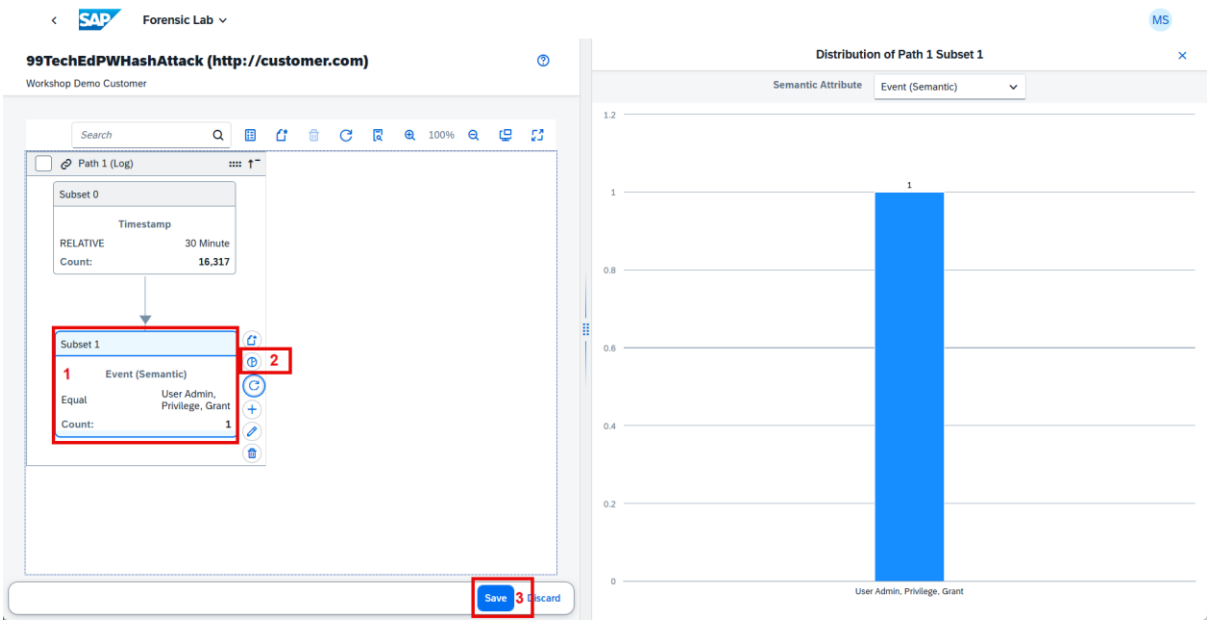




Information: To be able to see some data in the following filter steps, directly before the session started, all ETDADMIN## users in the S4/H system got a mass change by adding a high privilege.

- By clicking on the 'Create Subset' Symbol, a Popup appears to enter the filter criteria for the next subset. Please enter:
    - Semantic Attribute: Event (Semantic)
    - Type: Value
    - Operator: Equal
    - Value: User Admin, Privilege, Grant
- Then click 'Apply'.
- 

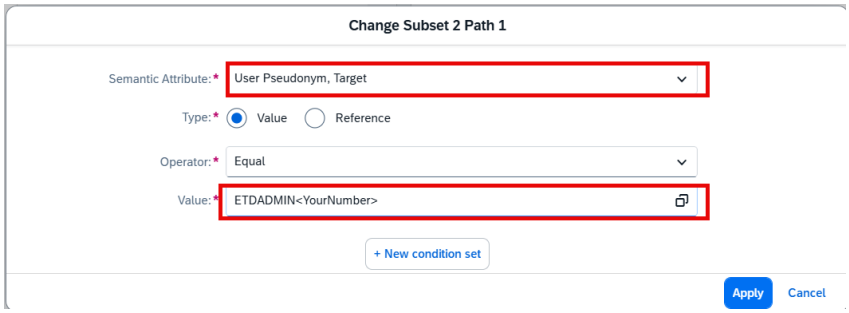
- Your new Filter Subset 'Subset 1' appears. By clicking into the Subset 1, you can use the small symbols at the side (especially the Pie-Chart Symbol) to do a preview on the data filtered in Subset 1 in the Preview area.
- Sometimes click on the 'Save' Button



- Create a new Subset to filter (for Demo Purposes) on your own ABAP User ETDADMIN<YourNumber>. In the Popup enter:
    - Semantic Attribute: User Pseudonym, Target
    - Type: Value

- Operator: Equal
- Value: ETDADMIN<YourNumber>

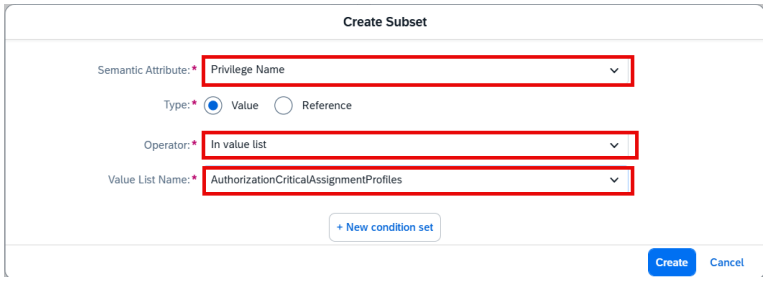
- Then click on ‘Create’



- You new Subset is showing as ‘Subset 2’. By refreshing and selecting the Pie Chart you can see some data in Subset 2.

Information: ETD provides a role concept about users, systems, IP addresses, etc. An ‘Acting User’ is a user, who does something. A ‘Target User’ is e.g. a user, to whom something is done.

- Create a new Subset with the following values:
  - Semantic Attribute: Privilege Name
  - Type: Value
  - Operator: In value list
  - Value: AuthorizationCriticalAssignmentProfiles
- Then click on ‘Create’

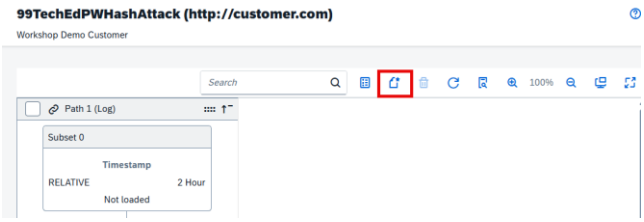


- You new Subset is showing as ‘Subset 3’. By refreshing and selecting the Pie Chart you can see some data in Subset 3.

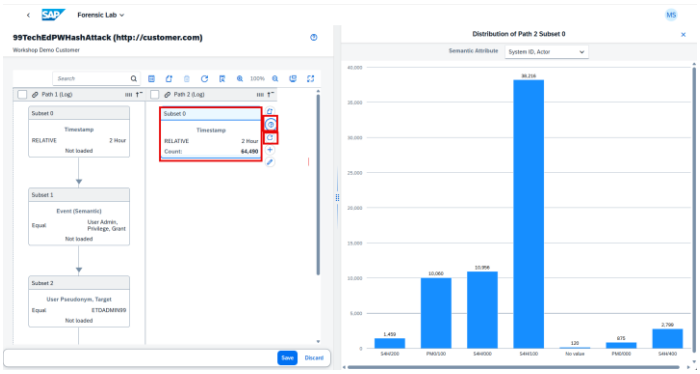
Information: The value list AuthorizationCriticalAssignmentProfiles contains typical predelivered values for Profiles (e.g. SAP_ALL, SAP_NEW, …). The filter is then set as an ‘IN’-filter about all values.

To be able to corelate the provisioning of a high privilege with the miss-use of the privilege (in the example: look up Password hashes), a second filter path needs to filter on that activity, and then corelate to the high privilege provisioning (via reference filter).

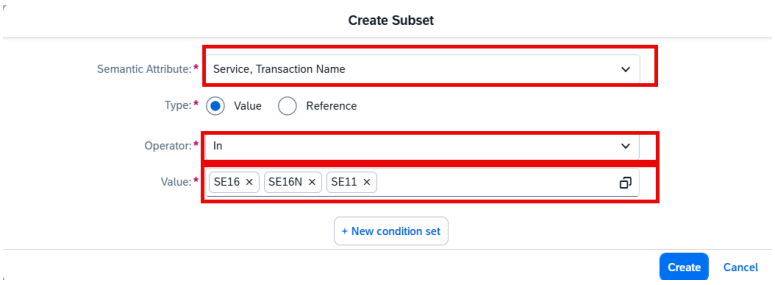
- Click the ‘Create Path’ Symbol



- Select the Context 'Log' and 'save'. Your second filter path 'Path 2' is created and already contains a timestamp filter in Subset 0.
- Again, change the timestamp filter to Last 2 hours (to be able to see some data). Then you can click the 'Refresh' symbol and the 'Pie-Chart' symbol to see the data of Path2, Subset 0.



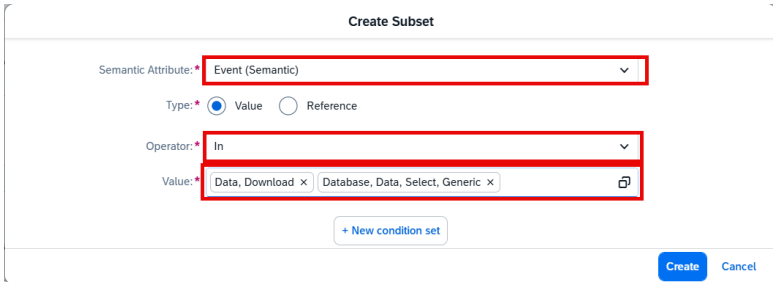
- Create a new Subset with the following values:
  - Semantic Attribute: Service, Transaction Name
  - Type: Value
  - Operator: In
  - Value: SE16, SE16N, SE11
    - i. **Hint**: To enter the In-Value List, enter the 1st value, then press 'Enter', then enter the 2nd/next value and always press 'Enter' in between. The single values are shown separatedly.
- Then click on 'Create'



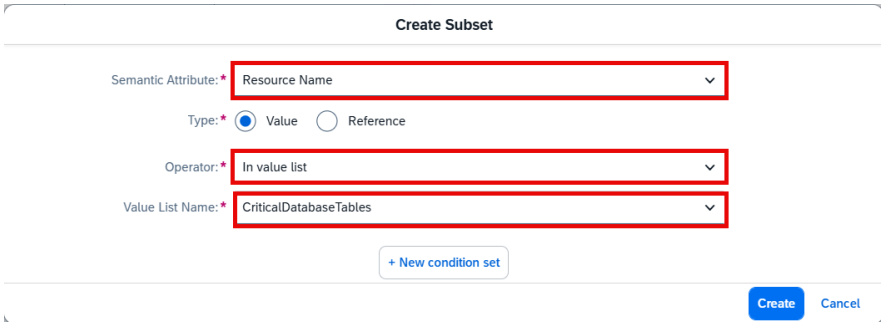
- Your new Subset is showing as 'Subset 1' in Path 2. By refreshing and selecting the Pie Chart you can see some data in Subset 1.
- Create a new Subset with the following values:
  - Semantic Attribute: Event (Semantic)
  - Type: Value
  - Operator: In
  - Value: Data, Download ; Database, Data, Select, Generic

i. **Hint**: To enter the In-Value List, enter the 1st value, then press 'Enter', then enter the 2nd/next value and always press 'Enter' in between. The single values are shown separately. You can as well check if the Semantic events are visible in the selection box, then you can select them via checkboxes

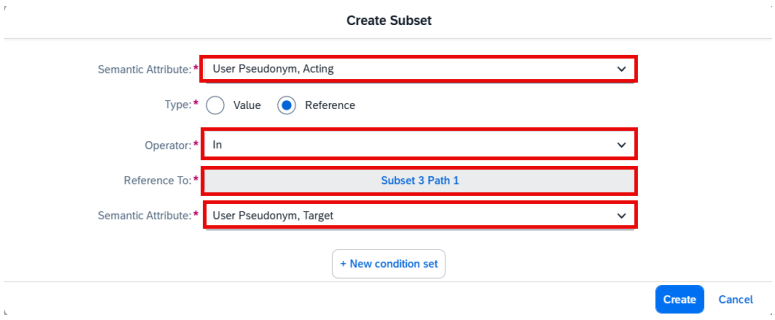
- Then click on 'Create'



- Your new Subset is showing as 'Subset 2' in Path 2. By refreshing and selecting the Pie Chart you can see some data in Subset 2.
- Create a new Subset with the following values:
  - Semantic Attribute: Resource Name
  - Type: Value
  - Operator: In value list
  - Value: CriticalDatabaseTables
    i. Hint: The Attribute 'Resource Name' contains objects (like DB tables, files) from where/to which data is read/written
- Then click on 'Create'

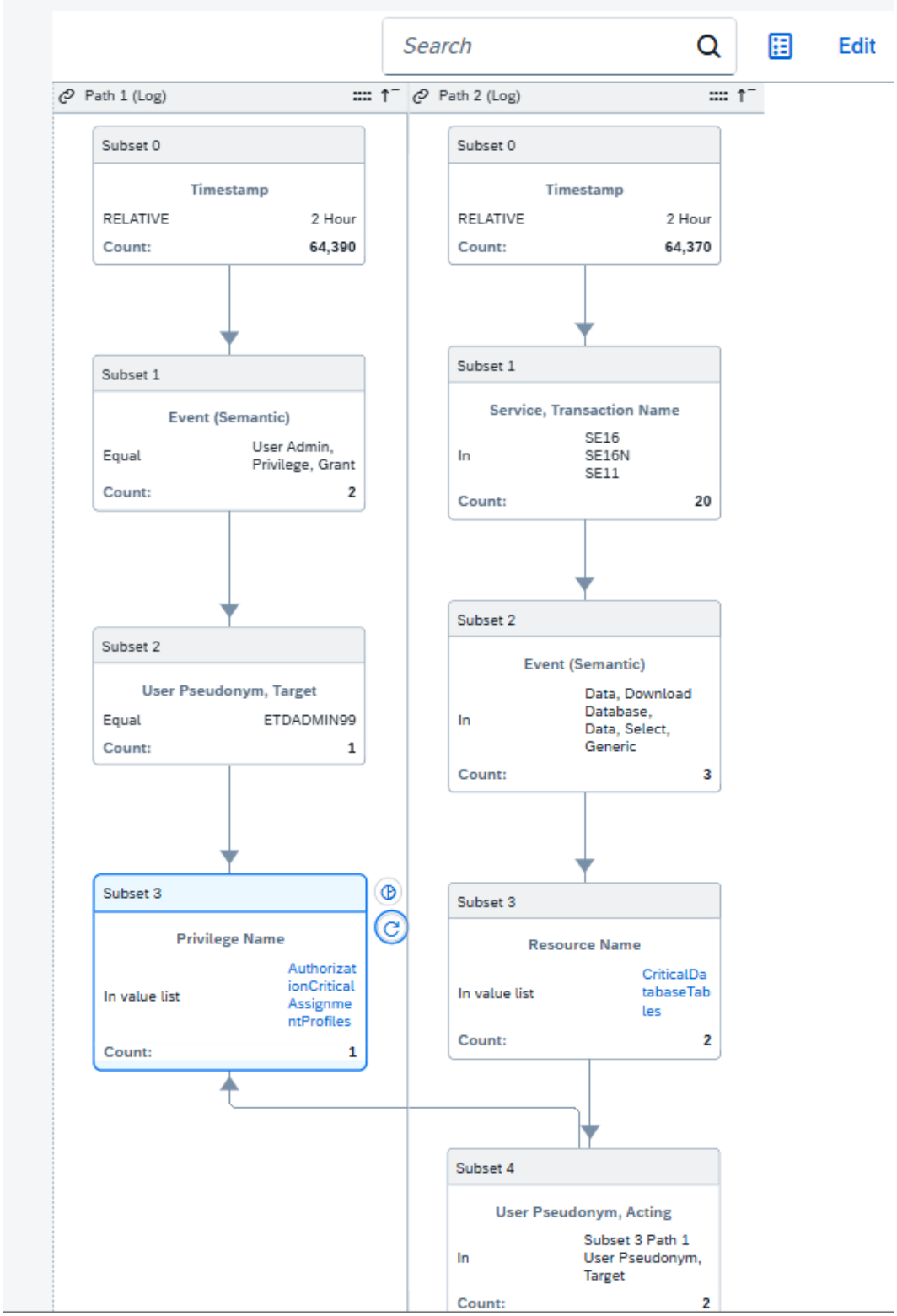


- Your new Subset is showing as 'Subset 3' in Path 2. By refreshing and selecting the Pie Chart you can see some data in Subset 3.
- Finally, create a Subset, which corelates between Path 1 filter results for provisioning of high privileges to a **target** user, and path 2 results for the same **acting** user accessing a critical DB table with Password hashes. Use the following values:
  - Semantic Attribute: User Pseudonym, Acting
  - Type: Reference
  - Operator: In
  - Reference To: Subset 3, Path 1
  - Value: User Pseudonym, Target
- Then click on 'Create'



- Your new Subset is showing as ‘Subset 4’ in Path 2. By refreshing and selecting the Pie Chart you can see some data in Subset 4. Data can be seen if within last 2 hours the user got a high privilege, and in the same timeframe accessed a critical DB table.

The final result should look like this:



5.1.1 Assigning a Chart

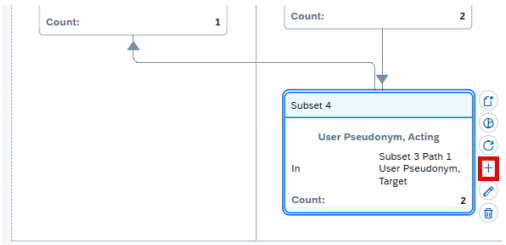
The Workspace and filters you have built defines a way to identify events pointing at a new threat. In real life, if you suspect this is an attack and that it might repeat, you want to re-use these definitions and actually automate them to throw an Alert whenever the same occurrence happens again.

To this end, the logical next step in *SAP Enterprise Threat Detection, cloud edition* is to define (name and save) the Browsing Chart pertaining to one of your Subsets.

Such a named Chart can then be used to build a new Pattern – which generates Alerts whenever Log Entries pertaining to the Subset/Chart reach a predefined threshold (e.g. “more than 5 processed bank account numbers per day”, or “every single access to a critical database table”).

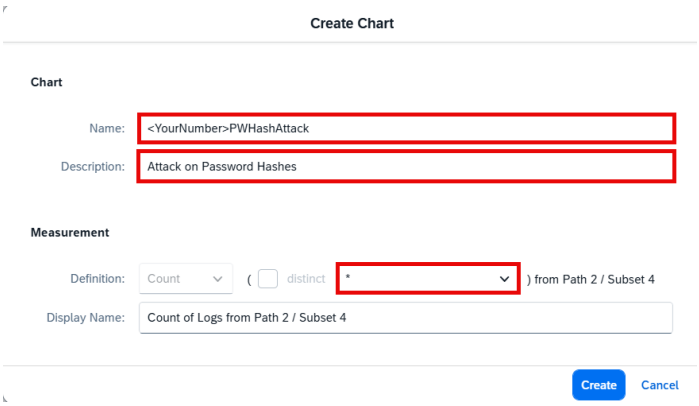
This is the primary way of building new content in *SAP Enterprise Threat Detection, public cloud*.

In this demo case, we look to the final Subset on “User Pseudonym, Acting” in Path 2. Switch to edit mode again, and mark Subset 4, Path 2. Then press “Create Chart”:



In the pop-up, assign a name among the lines of “<YourNumber>PWHashAttack”, and a description. Mark down the name.

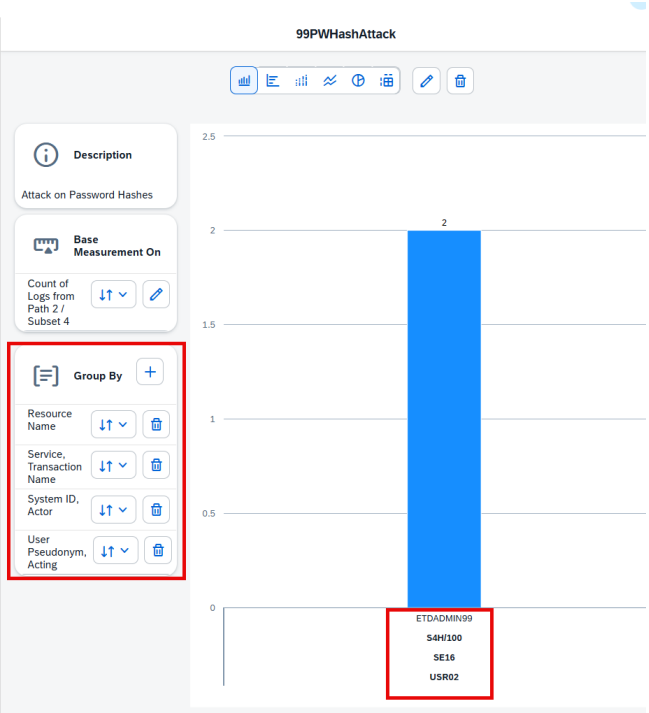
For measurement, choose the “count” * and a fitting Display Name if you like:



Click on “Create”. In the ensuing screen, choose to “Group By” the semantic events

- Resource Name
- Service, Transaction Name
- System ID, Actor
- User Pseudonym, Acting

The resulting Chart should be looking something like this. Note how the grouping results in the resource USR02 and a user pseudonym being displayed (which should be the pseudonym assigned to your ETDDEMO## user):



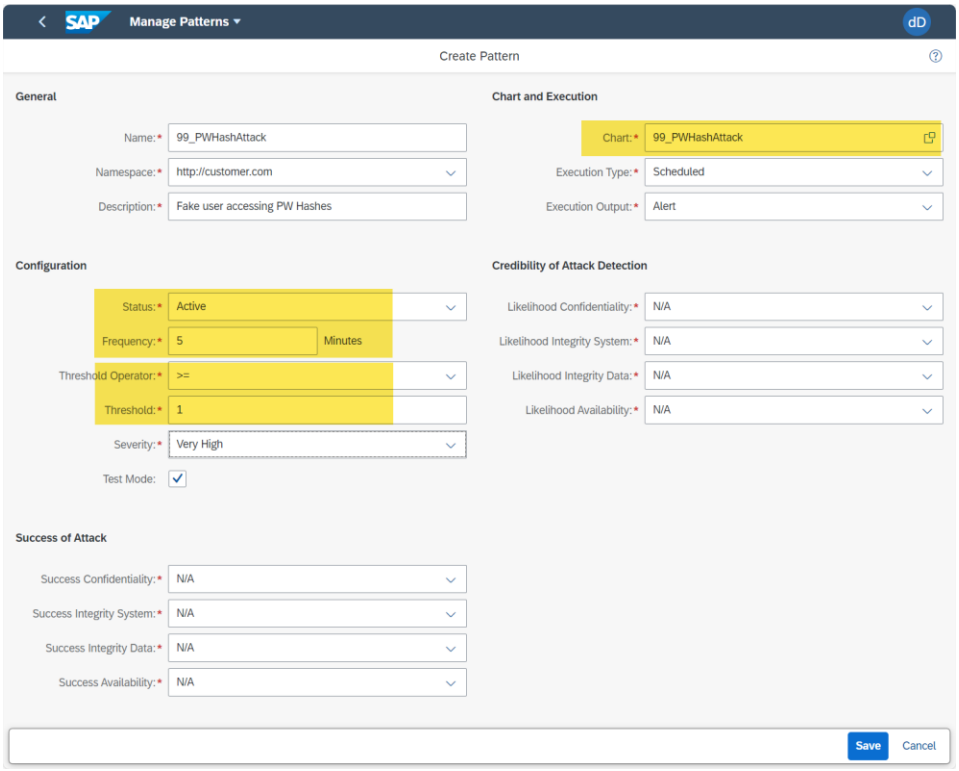
- Finally, click the ‘Save’ Button

Note: Per each deviating combination of the (in this example) 4 grouped attributes, there would arrive another bar in the bar chart.

6. From Workspace to Pattern to Alerts

6.1 Understanding Patterns

- Return to the Console Home Screen and Enter the “Manage Patterns” app.
- Choose to “Create Pattern” and in the pop-up maintain the relevant information. Importantly, set the status to “Active”, frequency to the lower limit of 5 minutes; and Threshold to >=1. In the “Chart” field, retrieve and assign the Chart you have created.

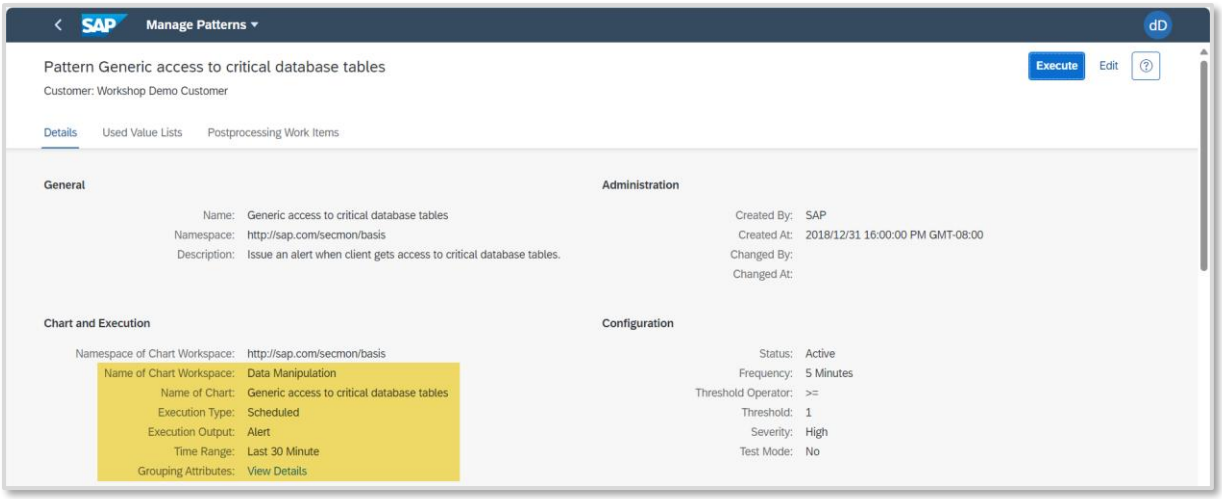


The fields for Success of Attack and Credibility of Attack Detection can help to gauge the severity of a breach, but does not have a direct influence in the context of this hands-on session.

Information: If you mark the checkbox ‘Test Mode’, then alerts will as well be created, and be visible in the alert list, but they will be in status ‘Test Mode’ and can be deleted later-on. Reasoning is, that in ‘Test Mode’, the Pattern is still reworked, until it functions properly, and does not create too many false positives. Later, the marker can be removed, and from that time on, the alerts cannot be deleted any more, as they are now seen as real alerts, and deletion might cause compliance issues.

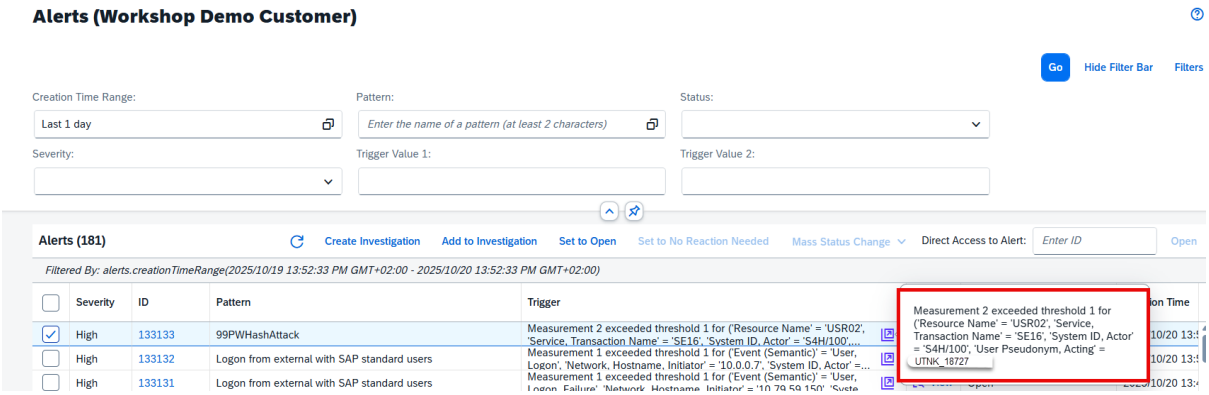
Save your work.

In the resulting screen, trigger the button “Execute” to run the pattern on the logs in the hot storage (evaluating past logs for the event happening), and generate Alerts.

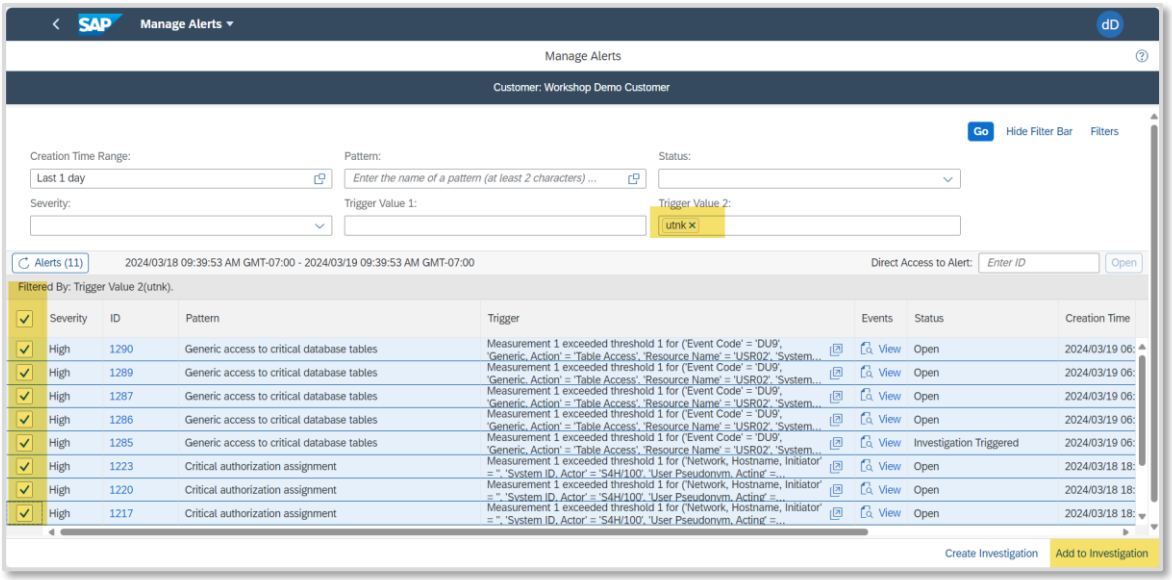


- Finally, return to the Manage Alerts app. Filter for Alert(s) pertaining to your pattern xx_PWHashAttack. Have a look at the “trigger” field, detailing the resource and the user (pseudonym) responsible for creating the alert (if necessary, expand the text/field).

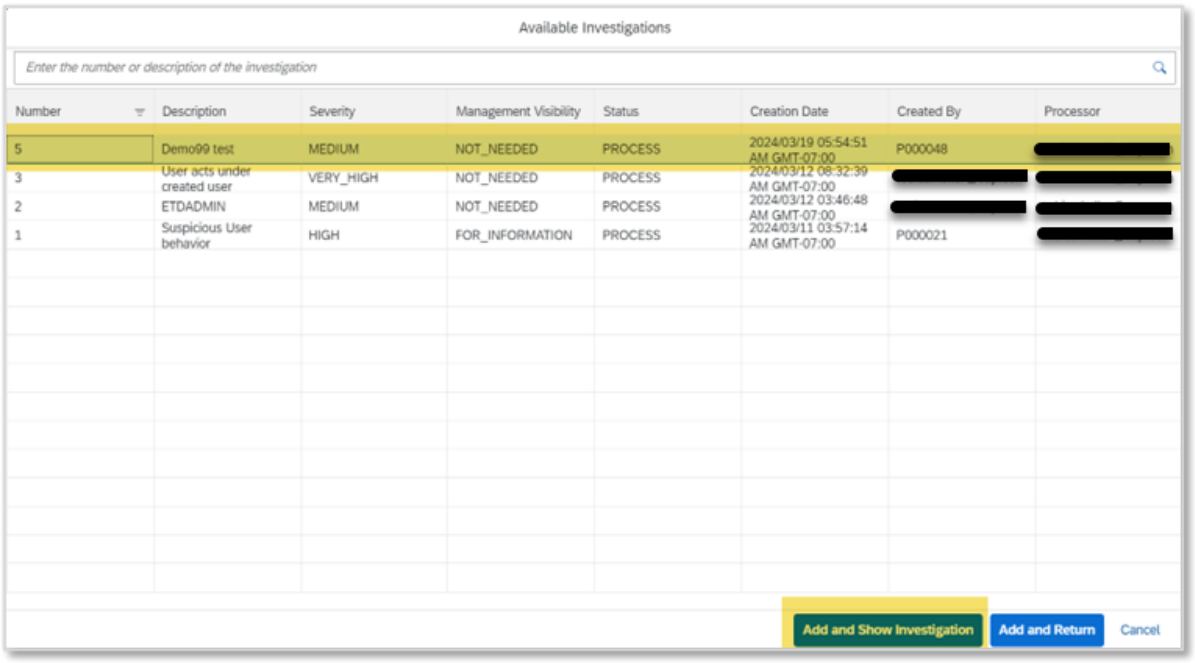
Your Alert looks like this:



- Mark the alert(s), and add them to your Investigation:



In the following screen, press “Add and Show Investigation”:



7. Finalize the Investigation

You can now conclude the Investigation.

7.1 Information: Maintain your email ID to receive investigation reports

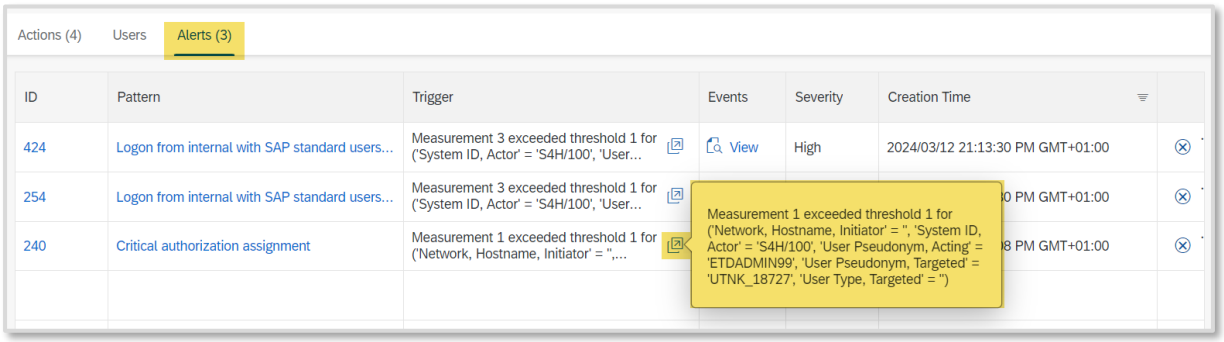
In SAP Enterprise Threat Detection, cloud edition, finalized and relevant investigations will result in reports generated and sent to the appropriate/responsible persons on customer/client side. It is possible to maintain a mail address to receive information about a newly created report, if the checkbox ‘Customer notification’ is marked within the Investigation during processing. The mail address can be maintained within the ‘Manage Settings’ Tile.

Please note:

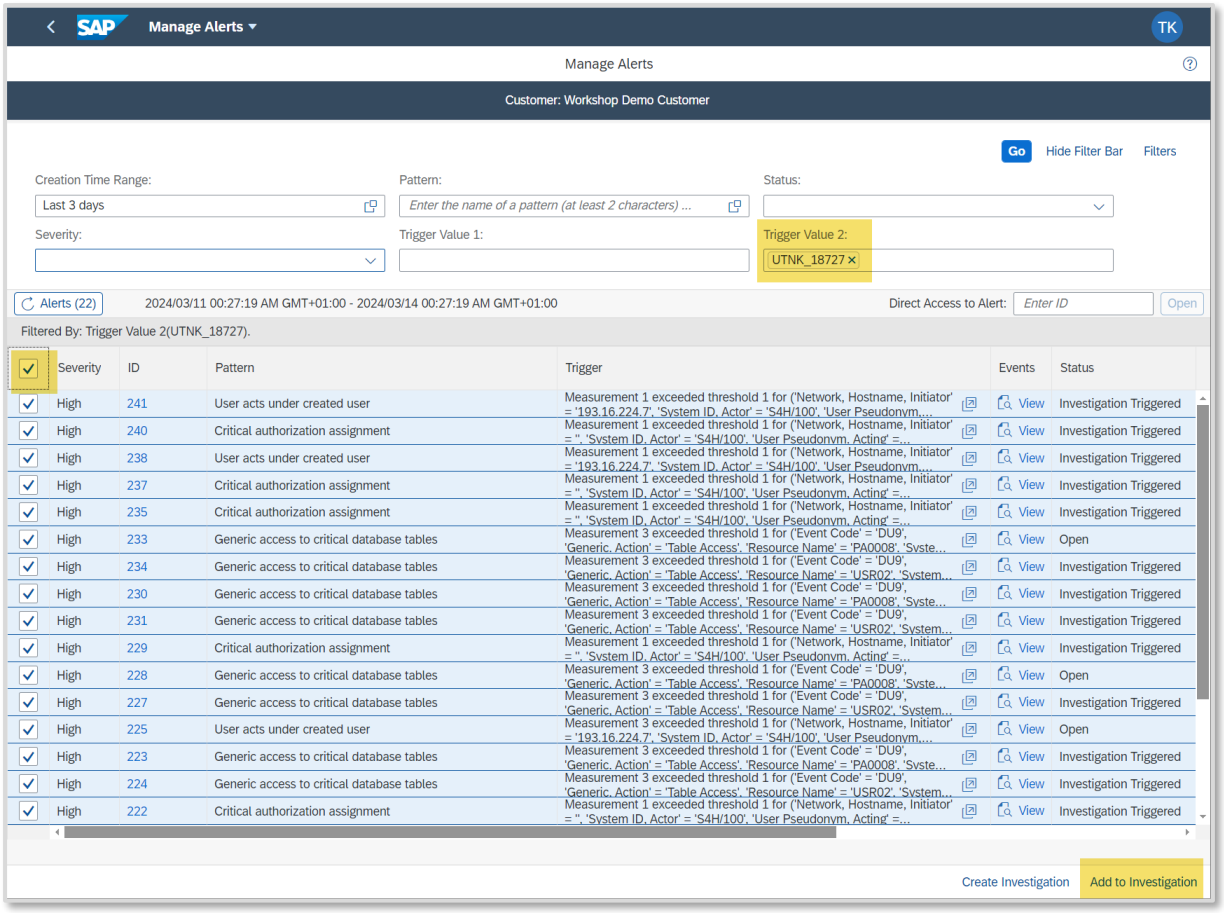
- Please don’t exchange the mail address, neither to an own one, nor to another one, although you might have the authorization. It results in receiving multiple reports also from other workshop participants to the maintained mail address.

7.2 Finalize the investigation

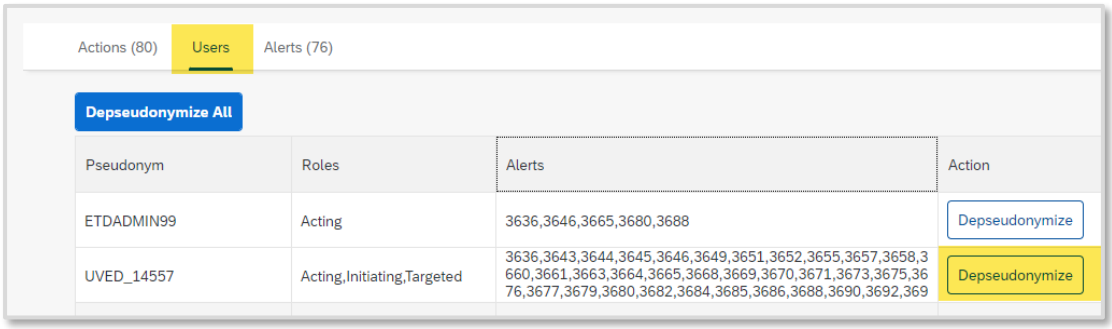
- In the app for “Manage Investigations”, you will find the header information you have maintained before and can edit. You may choose “edit” in case you desire to change the information.
- In the middle section, click on “Alerts”. Here, you can research the Alerts, have a look at some of the complete triggers explanation texts and how they codify the core findings in this text. You may also review some of the triggering Events.



- In the Trigger text, you may also come across additional user pseudonyms or references to IP addresses from where the triggering actions were initiated. These can be valuable leads to follow up on – If you have time left, you may note down the pseudonyms (or also users in clear) and IP addresses, return to the Manage Alerts app, search for more Alerts involving these pseudonyms, and add the results to your Investigation.

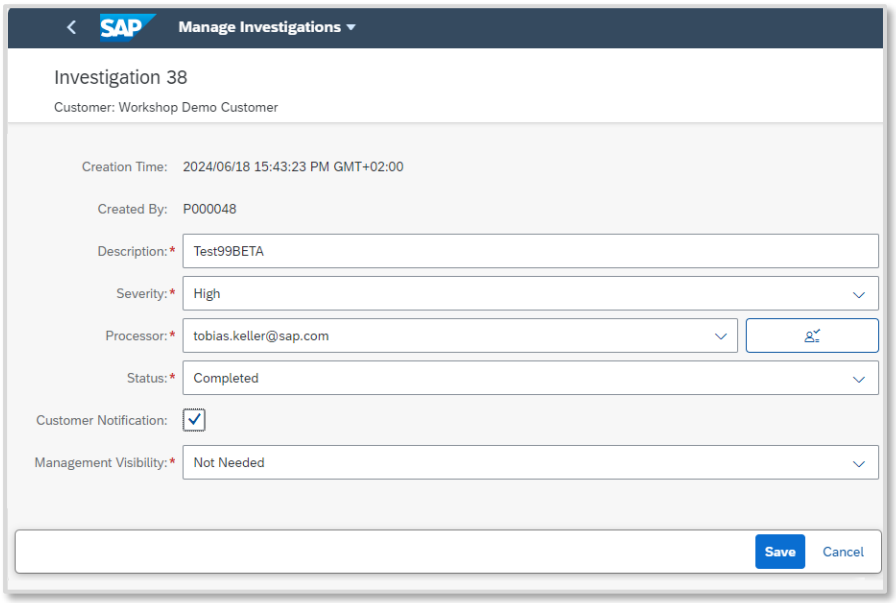


- Finally, return to your Investigation. You may comment/document what actions you have been performing, and what deductions these allow.
- Then return to the tab for “Users”. For each pseudonym, trigger the de-pseudonymization:



- This will reflect in the “Actions” tab – have a look at the clear user names. You should be spotting your ETDDEMO## somewhere!

- Lastly, finalize the Investigation. Click “Edit”, update the header information as needed, set status to “completed”, activate “Customer Notification”, and save.



  This closes the investigation, and no more changes are possible.
- At the same time, an Investigation Record is created (and a link sent via mail to the addresses maintained in chapter 7.1). This may take a couple of minutes.

This concludes the *SAP Enterprise Threat Detection, public cloud* part of the threat countering process. The further proceedings would now be in the hands of the investigations report processor(s) (see next chapter), who may involve their security team to take action on the system users and physical persons behind them.

8. Consumer/Processor role: Work with Investigation reports

This exercise is Demo only!

You are now switching to your 3rd role as consumer/processor of the final product, the investigation report.

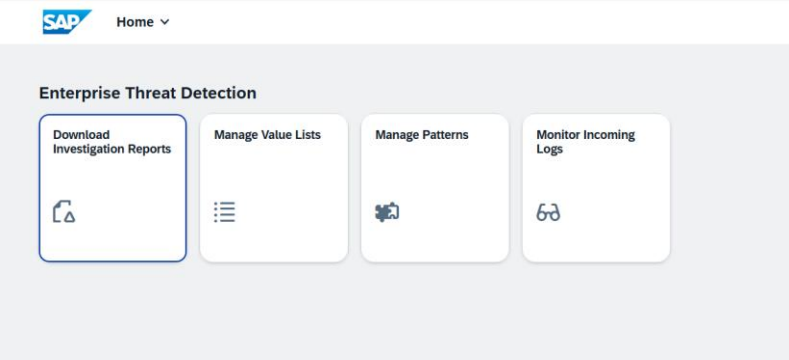
Logon to the consumer view of SAP Enterprise Threat Detection, cloud edition .

Use the ID indicated to you (01-35; afterwards referred to as “##”)

User: teched##@etdsap.com

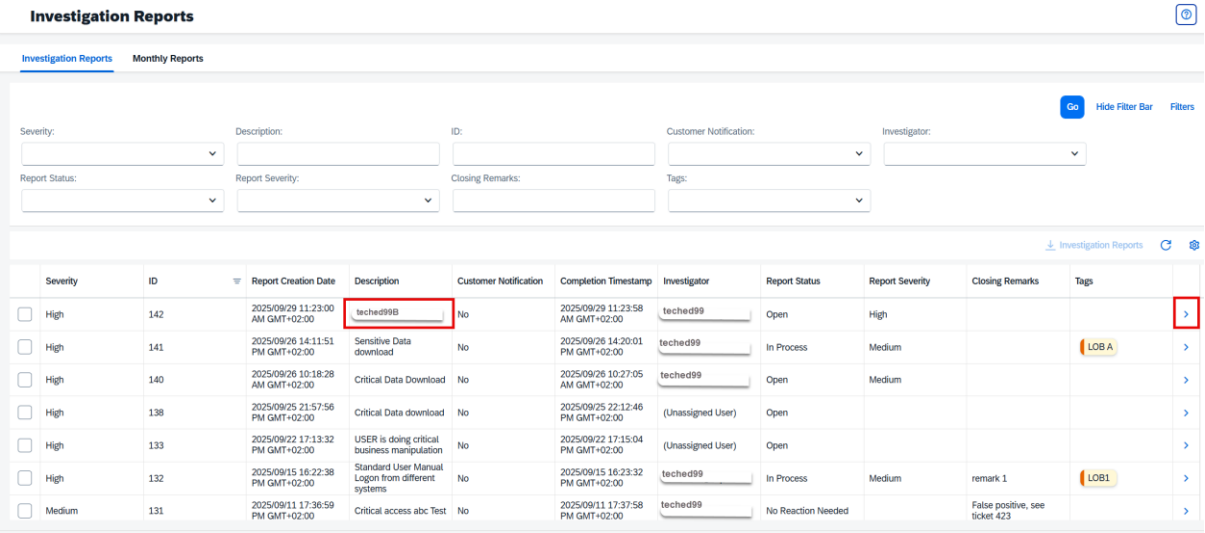
Password: will be provided in the session

You see the starting page for the consumer/processor role. It contains some view-only tiles, provided for corresponding transparency, if the analysis is provided by a service. The processor role does hence not see the analysis tiles.

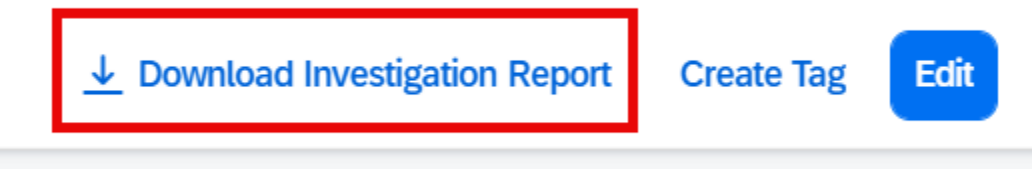


Click on Tile ‘Download Investigation Reports’

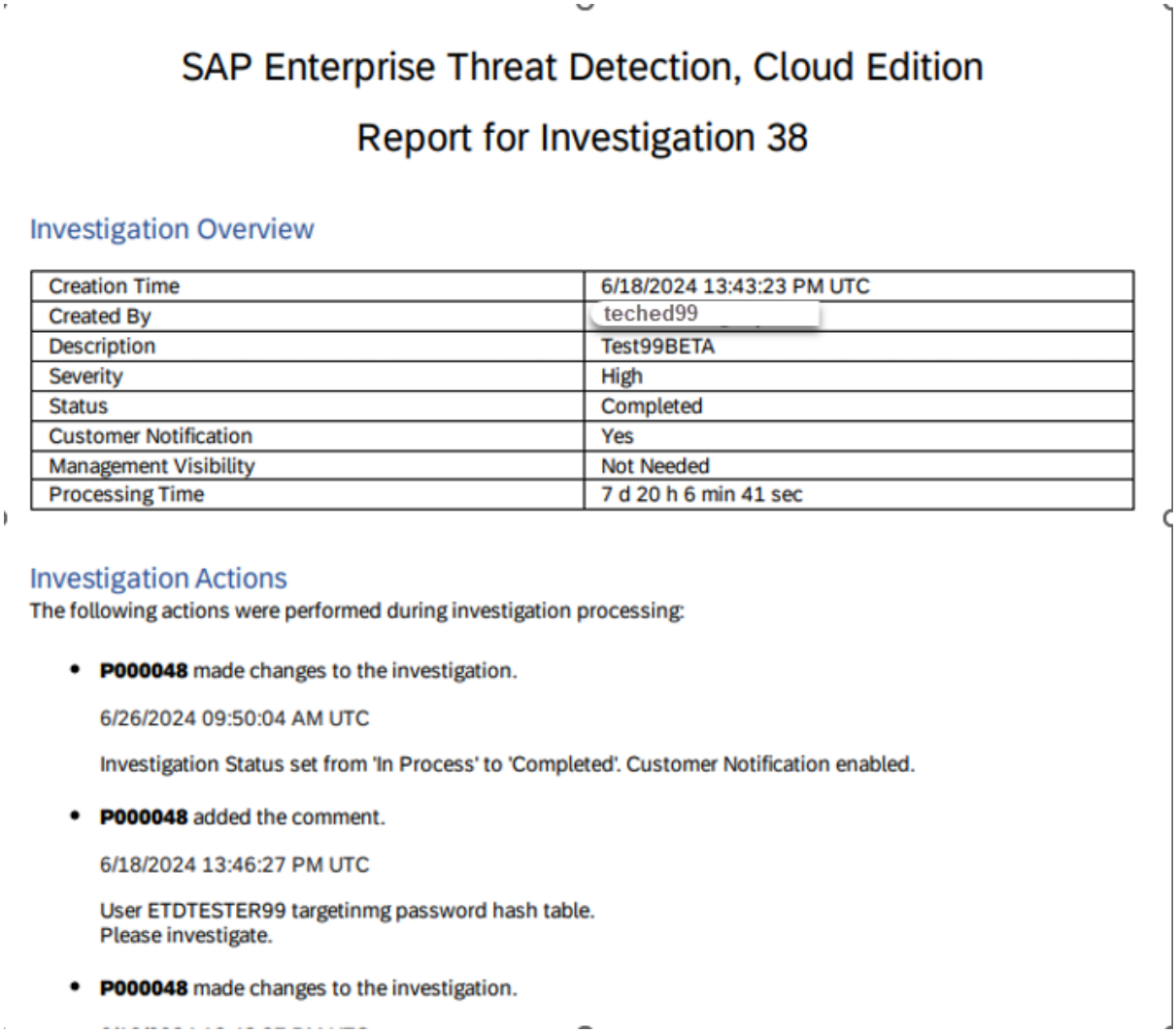
In the opening list UI, find your investigation (i.e. with your description), provided by you in your role as a security analyst.



By clicking on the small arrow, the Details-UI opens. By using the ‘Download Investigation Report’, a PDF document is downloaded. It contains all evidences (recommendations, comments, Alerts, triggering events)



An example report looks like:



SAP Enterprise Threat Detection, Cloud Edition

Report for Investigation 38

Investigation Overview

Creation Time	6/18/2024 13:43:23 PM UTC
Created By	teched99
Description	Test99BETA
Severity	High
Status	Completed
Customer Notification	Yes
Management Visibility	Not Needed
Processing Time	7 d 20 h 6 min 41 sec

Investigation Actions

The following actions were performed during investigation processing:

- **P000048** made changes to the investigation.

  6/26/2024 09:50:04 AM UTC

  Investigation Status set from 'In Process' to 'Completed'. Customer Notification enabled.

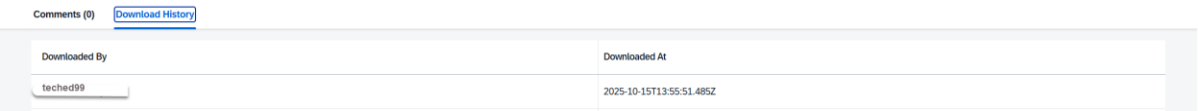
- **P000048** added the comment.

  6/18/2024 13:46:27 PM UTC

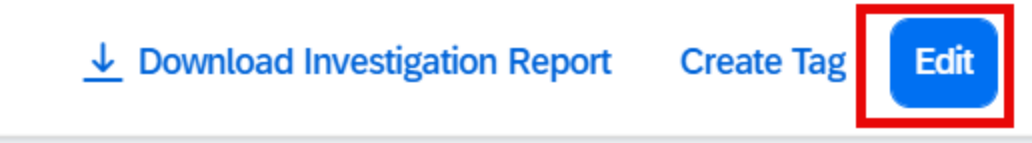
  User ETDTESTER99 targetinmg password hash table.
  Please investigate.

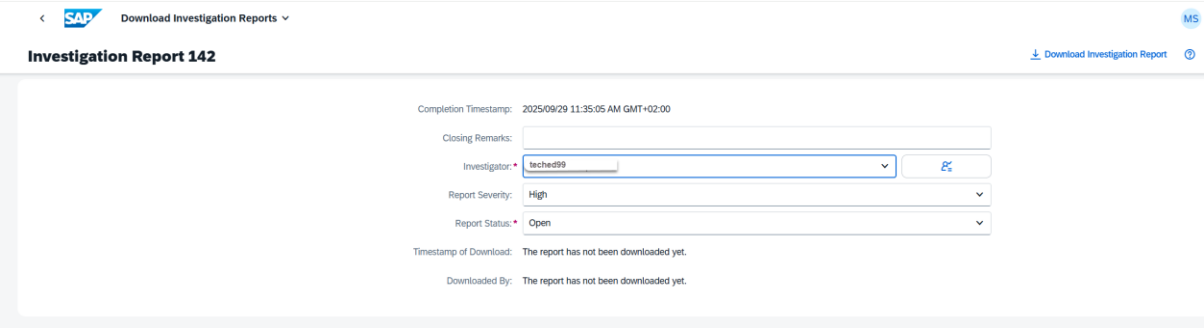
- **P000048** made changes to the investigation.

The Download activity can be seen in the ‘Download History’ Section

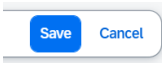


By clicking on the ‘Edit’ Button, the entry fields can be changed. The processor of the Investigation Report can here enter his own status about mitigation of the incidents, which are analyzed by the security specialist.



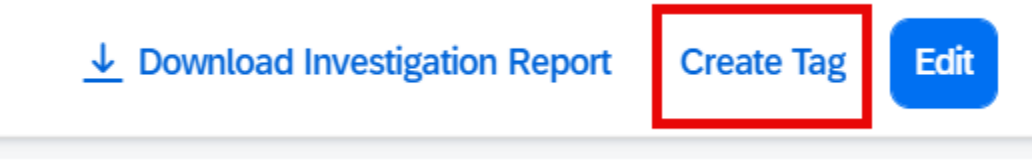


You can play around with filling the different fields, and save it.

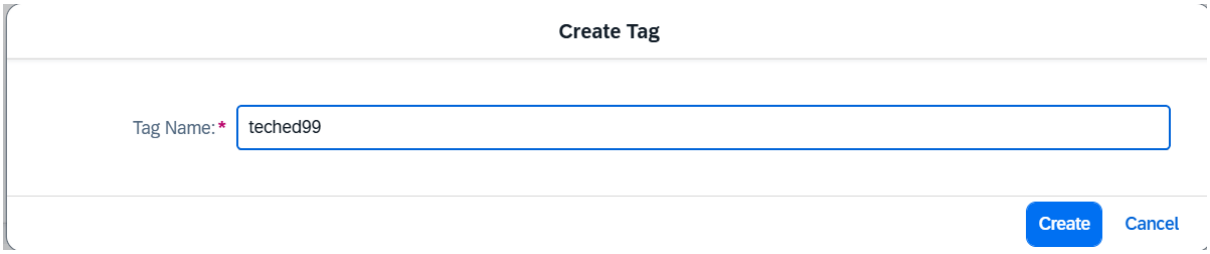


Information: After selecting the Report to the status ‘Closed’, it cannot be re-edited again, as to compliance reasons.

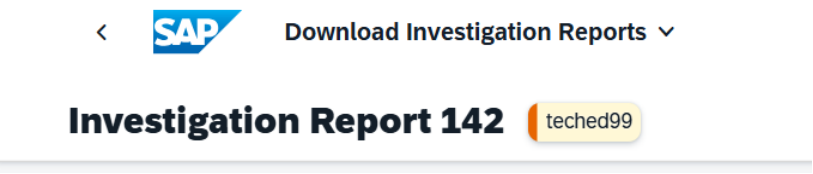
Additionally, you can add tags with search keywords, on which you can easily search in the Report list.



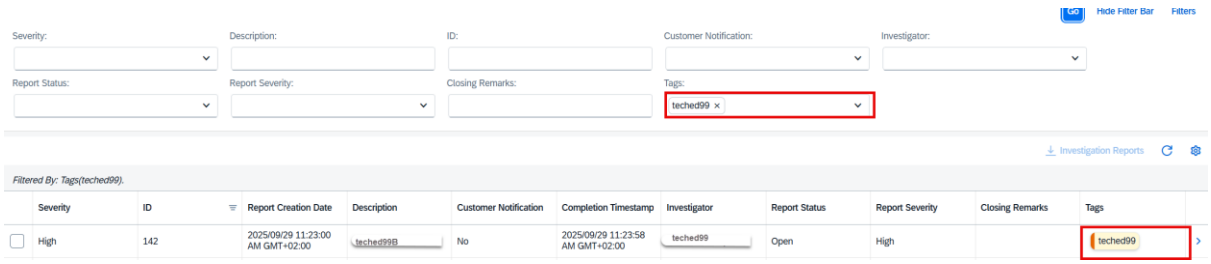
Enter a tag value, and enter the ‘Create’ Button.



Afterwards, you find the tag value in the ‘Details’-UI.



And, going back to the list, you find the tag in the list entry, and you can search for it



Thank you for your patience and hard work on this demo. We hope you liked this session and exercise!

For any feedback, please address your trainer, or product management:
SAP-ETD@sap.com