



PUBLIC

Cloud Security Dashboard Configuration

with Sample Data +
with SAP Analytics Cloud & Cloud Application Lifecycle Management

How To Guide



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Changelog

Time	Version	Comment
16.01.2024	v1.0	Document created
26.01.2024	v2.0	Document enhanced with Cloud ALM API Connectivity setup
01.02.2024	V2.1	Clarification on step-by-step import setup
01.10.2024	V2.2	Chapter 'Data Model', 'Connect the SAP Analytics Cloud Model to the SAP Cloud ALM Connection' enhanced

1. Abstract

This document provides information on the consumption of the cloud security recommendations via the Cloud ALM API. It also explains how a data model from SAP Analytics Cloud can be used to visualize the compliance status of the provided security data.

Additionally, sample data is provided as part of the package to show how a data model could be built up. Data from an XLSX file enriches the data delivered by the API.

Note: Section 0 and Section 5 explain the sample files and are not required to setup the connectivity between SAP and Cloud ALM.

2. Audience

- Customers who want to use the Cloud ALM API to retrieve cloud security relevant data in its raw format.
- Customers who want to use the Cloud ALM API in combination with SAP Analytics Cloud to visualize the results by using the SAP Analytics Cloud Security Dashboard.
- Partners who want to build their own dashboard solution.

3. Resources

Security Recommendations:

- [Cloud Security Recommendations Overview](#)
- [BTP Security Recommendations](#)

Cloud ALM API:

- [Cloud ALM Analytics API](#)
- [API Guide for SAP Cloud ALM](#)
- [Configuration Stores of Cloud ALM](#)

SAP Analytics Cloud:

- [SAP Analytics Cloud](#)

4. Data Model

SAP provides a Cloud Security SAP Analytics Cloud Story as a template within SAP Analytics Cloud that customers can use as a basic dashboard or as a starting point to develop more comprehensive dashboards. This template is using the following data structure and combines two data sources:

- **Cloud ALM API** which will be queried as configured in SAP Analytics Cloud's data import scheduler.
- **Static Extension file** which will extend the information from the API based on information from the security recommendation help pages.

Note: this file must be periodically updated within SAP Analytics Cloud to get updates, e.g., when new cloud systems and services are coming into scope. See Section 8.a)

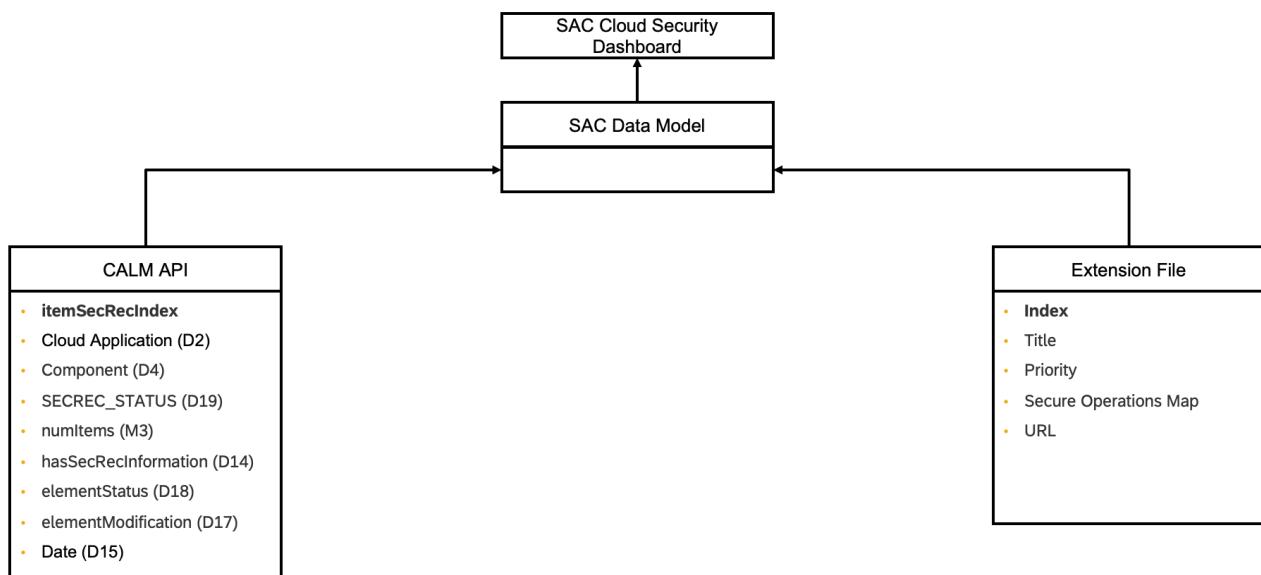


Figure 1: SAP Analytics Cloud Security Data Model

a. SAP Analytics Cloud Naming Convention

Object Name in SAP Analytics Cloud	Object Type	Description
SAP_CC_Security_Configuration	Story	SAP Analytics Cloud Story which is showing the Cloud Security Recommendations
SAP_CC_Security_Configuration	Model	SAP Analytics Cloud Data Model for the Cloud Security Recommendations delivered by the Cloud ALM API and the static extension file
SAP_CC_SecConfig_CALMAPI	Dimension Table	Reflects the static extension file within the SAP Analytics Cloud Data Model.

		Note: this table must be maintained once new cloud services are getting onboarded. See Section 8.a)
--	--	--

b. Data Model in SAP Analytics Cloud

- The imported data from the Cloud ALM API is stored in the “ID” object of the SAP Analytics Cloud Data Model.

Name	Description	Type	Additional Details
Version	Version	Version	1
Date	Date	Date	-
SAP_CC_SecConfig_CALMAPI	SAP SEC Extended Information on Cloud Security Recommendation	SAP_CC_SecConfig_CALMAPI	30
ID	ID	ID	55
TFrom	TFrom	TFrom	11
Period	Period	Period	3
Resolution	Resolution	Resolution	2
Timezone	Timezone	Timezone	2
Provider	Provider	Provider	2
Version_Internal	Version_Internal	Version_Internal	2
Query	Query	Query	1
Timestamp	Timestamp	Timestamp	87
Week	Week	Week	15

Figure 2: Data Model Structure in SAP Analytics Cloud

- By clicking on the “ID” object, the Cloud ALM API data can be observed.

Member ID	Description	DSK	DIV	D2K	D2V	DSK	D9V	D4K	D4V	DSK	D9V	D4K	D6V	D7K	D7V	DRK	DRV
ObjectSet-Cloud-4000-BB..	Unsigned																
1a151ab3-30f8-4e0d-8..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	DS09151a-5640-4799-85..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	store4cpid	d205f04a-5640-4799-85..	store4cpaption	System.CredStore01Dev	s01150	S01150	
1aef7705-f4a4-4433-9..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	DS09151a-5640-4799-85..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	store4cpid	d205f04a-5640-4799-85..	store4cpaption	System.CredStore01Dev	s01150	S01150	
202a6811-6a02-4371-a..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	205f04a-4c0b-437a-59..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	store4cpid	205f04a-4c0b-437a-59..	store4cpaption	System.CredStore01Dev	s01150	S01150	
2f2fa4a3-d432-4b06-9..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	DS09151a-5640-4799-85..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	store4cpid	d205f04a-5640-4799-85..	store4cpaption	System.CredStore01Dev	s01150	S01150	
2e013523-1303-4501-b..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	DS09151a-5640-4799-85..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	store4cpid	205f04a-4c0b-437a-59..	store4cpaption	System.CredStore01Dev	s01150	S01150	
2f59567c-30fe-4984-9..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	DS09151a-5640-4799-85..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 01 Dev (CSA)	store4cpid	205f04a-4c0b-437a-59..	store4cpaption	System.CredStore01Dev	s01150	S01150	
3f70991f-651a-4169-9..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	205f04a-4c0b-437a-59..	serviceName	CredStore01Dev	serviceNameDesc	CredStore 02 Dev (CSA)	store4cpid	205f04a-4c0b-437a-59..	store4cpaption	System.CredStore02Dev	s01150	S01150	
4e4f7703-a54f-49b9-b..	serviceType	SCP_CREDSTORE	serviceTypeLabel	SAP Credential Store	servicoid	205f04a-4c0b-437a-59..	serviceName	CredStore02Dev	serviceNameDesc	CredStore 02 Dev (CSA)	store4cpid	205f04a-4c0b-437a-59..	store4cpaption	System.CredStore02Dev	s01150	S01150	

Figure 3: Data Model Example of the ID Object

The screenshot shows the SAP Modeler application interface. At the top, there's a header bar with the SAP logo, the title "SAP_CC_Security_Configuration", and various navigation icons. Below the header is a toolbar with buttons for "Edit", "Data", and "Validation". A secondary toolbar above the main table area includes icons for saving, deleting, and filtering. The main content is a table titled "Dimension Table" under the "Workspace" tab. The table has columns for Member ID, Description, Priority, Secure Operations Map, URL, and Component. It contains 30 rows of data, each with a unique ID and corresponding details.

	Member ID	Description	Priority	Secure Operations Map	URL	Component
1	#	Unassigned				
2	ARI-MFA-001	Strong Authentication	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Supplier Management
3	ARI-UMS-001	Access Control	Recommended	Roles and Authorizations	https://help.sap.com/doc...	SAP Business Network
4	BTP CRS_0002	Encryption of API Paylo...	Critical	Security Hardening	https://help.sap.com/doc...	Credential Store
5	BTP CRS_0006	Rotation of Binding and ...	Critical	Security Governance	https://help.sap.com/doc...	Credential Store
6	BTP CRS_0007	Strong Authentication fo...	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Credential Store
7	BTP-ALS-0001	Update Dependent Libra...	Recommended	Custom Code Security	https://help.sap.com/doc...	Application Logging Ser...
8	BTP-CLC-0001	Security Fixes	Critical	Secure SAP Code	https://help.sap.com/doc...	Cloud Connector
9	BTP-CLS-0003	Monitor and update bind...	Recommended	Client Security	https://help.sap.com/doc...	Cloud Logging
10	BTP-CRS-0002	Encryption of API Paylo...	Critical	Security Hardening	https://help.sap.com/doc...	Credential Store
11	BTP-CRS-0003	Authorizations	Recommended	Roles and Authorizations	https://help.sap.com/doc...	Credential Store
12	BTP-CRS-0006	Rotation of Binding and ...	Critical	Security Governance	https://help.sap.com/doc...	Credential Store
13	BTP-CRS-0007	Strong Authentication fo...	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Credential Store
14	BTP-DES-0002	Token Lifecycle	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Destination Service
15	BTP-DES-0003	Strong Authentication	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Destination Service
16	BTP-DES-0004	Strong Authentication	Recommended	Authentication and Singl...	https://help.sap.com/doc...	Destination Service
17	BTP-IAS-0011	Audit Data	Advanced	Security Monitoring and ...	https://help.sap.com/doc...	Identity Authentication S...
18	BTP-IAS-0018	Disclaimer	Advanced	Regulatory Process Com...	https://help.sap.com/doc...	Identity Authentication S...
19	BTP-IAS-0019	Corporate Domain	Advanced	Awareness	https://help.sap.com/doc...	Identity Authentication S...
20	BTP-LMC-0006	Audit Logging	Recommended	Audit & Fraud Managem...	https://help.sap.com/doc...	SAP Landscape Manage...
21	BTP-UAA-0003	Token Lifecycle	Recommended	Client Security	https://help.sap.com/doc...	Authorization and Trust ...
22	BTP-UAA-0008	User Lifecycle	Advanced	User and Identity Manag...	https://help.sap.com/doc...	Authorization and Trust ...
23	BTP-UAA-0009	Service Specific	Advanced	Risk Management	https://help.sap.com/doc...	Authorization and Trust ...
24	BTP-WFM-0005	Asset Backup	Recommended	Data Privacy & Protection	https://help.sap.com/doc...	Workflow Management
25	S4-S4CE-BU-0005	Business Users: Auto-Lock	Recommended	User and Identity Manag...	https://help.sap.com/doc...	S4
26	S4-S4CE-COM-0004	Communication Systems...	Advanced	Security Governance	https://help.sap.com/doc...	S4
27	S4-S4CE-LOG-0001	Read Access Logging C...	Advanced	Data Privacy & Protection	https://help.sap.com/doc...	S4
28	SF-HXM-0007	Audit Data	Recommended	Security Monitoring and ...	https://help.sap.com/doc...	SAP SuccessFactors HX...
29	SF-PAY-0010	Obsolete Clients	Recommended	Security Hardening	https://help.sap.com/doc...	SAP SuccessFactors Em...
30	SSC-ENC-001	Encryption	Recommended	Security Hardening	https://help.sap.com/doc...	Cloud for Customer

Figure 4: Data Model Structure - Example of Dimension Table

Note: details to the Cloud ALM API can be found here:

- [Cloud ALM Analytics API on API Hub](#)
- [Cloud ALM Analytics API documentation](#)

c. Sample Data

The provided sample data is reflecting the data model described above. It is already part of the package. Please verify the list of services capable of delivering their security configuration data into SAP Cloud ALM on the [“Configuration & Security Analysis – Content” page](#).

5. Data Description

The Cloud ALM provides the data via the [Cloud ALM Analytics API](#). The data is delivered as:

- Dimensions with column names like D1K (Key) and D1V (Value)
- Measures like M1, M2, etc., with column name like M1K (Key) and M1V (Value)
- Additional attributes like timestamp

The following dimensions are relevant for the security dashboard:

a. Data Delivered by SAP Cloud ALM API

Attribute	Cloud ALM API Attribute	Description	Example
itemSecReIndex	D20	Security Recommendation ID as documented on the security recommendation help pages	BTP-CRS-0002
Cloud Application	D2	Main cloud application	BTP
Component	D4	Potential Subcomponent of the main cloud application	Credential Store
SECREC_STATUS	D19	Compliance or Non-Compliance	COMPLIANT
numItems	M3	Counter as Measure Attribute	1
hasSecReInformation	D14	Indicator if a recommendation is delivered. Should always be TRUE	TRUE
elementStatus	D18	Status of the reported element	Current
elementModification	D17	Indicator if the item was reported the first time or just updated	Initial
Date	D15	Date when the item was reported.	11/20/2023

Table 1: SAP Cloud ALM API Data Structure

b. Cloud Security Recommendations – Static Content

Column	Description	Example
itemSecRecIndex	Security Recommendation ID as documented on the security recommendation help pages	BTP-CRS-0002
Title_Topic	Topic description as described on the security recommendation help pages	Encryption of API Payloads
Priority	Priority Level documented on the security recommendation help page	Critical
Secure Operations Map	Area of SAP's Secure Operations Map	Security Hardening
URL	URL to the SAP help page with security recommendations	https://help.sap.com/docs/btp/sap-btp-security-recommendations-c8a9bb59fe624f0981efa0eff2497d7d/sap-btp-security-recommendations?seclist-index=BTP-CRS-0002

Table 2: Static Content File Structure

This data is derived from the Security Recommendation help pages of the LoBs. In case you add new applications or services, an update might be required.

6. SAP Cloud ALM API Connectivity

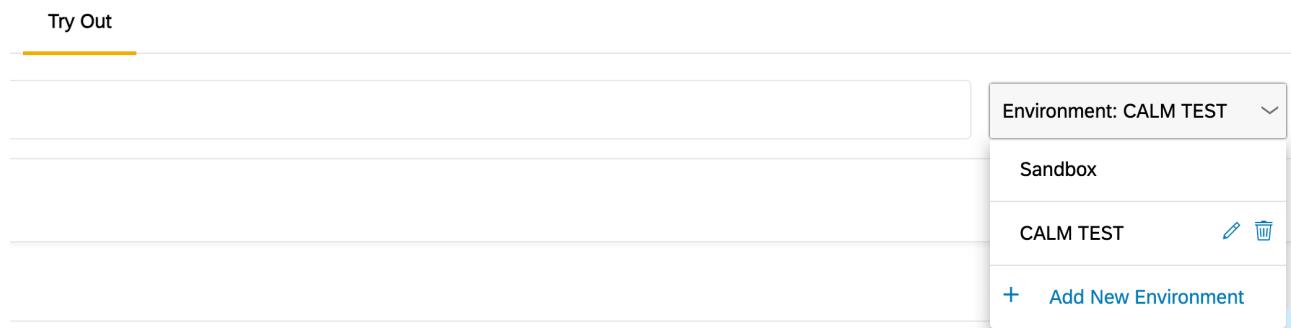
SAP Cloud ALM provides its data via an OData Service from the SAP Cloud ALM Analytics API. This section will describe how:

- The API can be tested via the Business Acceleration Hub (api.sap.com)
- and how the API will be called from SAP Analytics Cloud.

a. API Connectivity Test with SAP Business Accelerator Hub

Note: Before you start the connection between SAP Analytics Cloud and SAP Cloud ALM, it is recommended to test the SAP Cloud ALM connectivity on the [SAP Business Accelerator Hub](#). With this connection, you can validate if the required connection data (URL and credentials) is valid and if it can also be used later on for the SAP Analytics Cloud connectivity.

- Use the “Try Out” section of the SAP Cloud ALM analytics service,
- and create a new test environment.



The screenshot shows the 'Try Out' section of the SAP Business Accelerator Hub. On the left, there is a large input field labeled 'Try Out'. To the right, there is a dropdown menu labeled 'Environment: CALM TEST' with a dropdown arrow. Below the dropdown are two environment entries: 'Sandbox' and 'CALM TEST'. Next to 'CALM TEST' are edit and delete icons. At the bottom of the list is a blue button labeled '+ Add New Environment'.

Figure 5: API Hub Try Out Section

- Enter the Customer's SAP Cloud ALM Subaccount data into the connectivity form of the SAP Business Accelerator Hub.

Edit Configuration

Configure an environment for your licensed product to test APIs using your data.

API Name:  SAP Cloud ALM Analytics

Basic Information

Display Name:*****

CALM TEST

Starting URL:*****

`https://{{tenant}}.eu10.alm.cloud.sap/api/alm-analytics/v1`

Tenant *****

dev

Resulting URL

Resulting URL:*****

`https://dev.eu10.alm.cloud.sap/api/alm-analytics/v1`

Authentication

Authentication Type*****

OAuth 2.0 Application Flow

Client ID  *****

Client Secret  *****

Token URL*****

`https://[REDACTED].sap Fiori.edata.authentication.eu10.hana.ondemand.com/oauth/token`

Identityzone *****

calm-dev-eu10-[REDACTED]

Region *****

eu10

For the input form, the following data is required:

Configuration Item	Value	Description
Display Name	Free Text	Name of the configuration
Starting URL	URL of the SAP Cloud ALM Analytics API based on the customer's individual tenant.	URL of the analytics API will be automatically generated via the tenant ID.
Tenant	<Custom Value>	
Authentication Type	OAuth 2.0 Application Flow	Authentication method based on client ID / secret credential exchange with Oauth2
Client ID	<Custom Value> retrieved from SAP Cloud ALM Subaccount with SAP BTP Cockpit	
Secret	<Custom Value> retrieved from SAP Cloud ALM Subaccount with SAP BTP Cockpit	
Token URL	<identity zone>.authentication.<region>.com/oauth/token	
Identity Zone	<SAP Cloud ALM Subaccount organization name (Org Name)>	
Region	<SAP BTP Region (https://help.sap.com/docs/btp/sap-business-technology-platform/regions-and-api-endpoints-available-for-cloud-foundry-environment?version=Cloud)>	

Table 3: SAP Cloud ALM Connection Data

- Press the “RUN” Button. Results will be shown in the part of the Response Body with the HTTP OK, Code 200.

[Response Body](#) [Response Headers](#)

```
{
  "@context": "$metadata#DataSet",
  "@metadataEtag": "W/\"18a6694ff6f1ccc9cb6d7e00f1c7a024c1bbc29ed1ad612afdb40f8cad327d48\",
  "@count": 56,
  "value": [
    {
      "ID": "5d3df7b5-3e4f-4aed-b9e9-d1066c90130d",
      "tfrom": "20240116000000",
      "firstWeekDay": "M0",
      "period": "L7D",
      "resolution": "D",
      "timeZone": "+00:00",
      "provider": "DEMO_TASKS",
      "version": "v2",
      "query": "Project=CRM",
      "timestamp": "20240122000000",
      "date": "20240122",
      "lastUpdate": "2024-01-22T14:44:44Z"
    }
  ]
}
```

b. SAP Analytics Cloud Connection to SAP Cloud ALM

To setup the connection between SAP Analytics Cloud and SAP Cloud ALM, the same data is required, as described in Section 7(a), Table 3: SAP Cloud ALM Connection Data

i. Retrieve Client ID / Secret from SAP Cloud ALM tenant.

- Open your BTP cockpit and create a new instance of the service “SAP Cloud ALM API” within the Cloud Foundry Space. This service instance will hold the key and the needed authorizations.

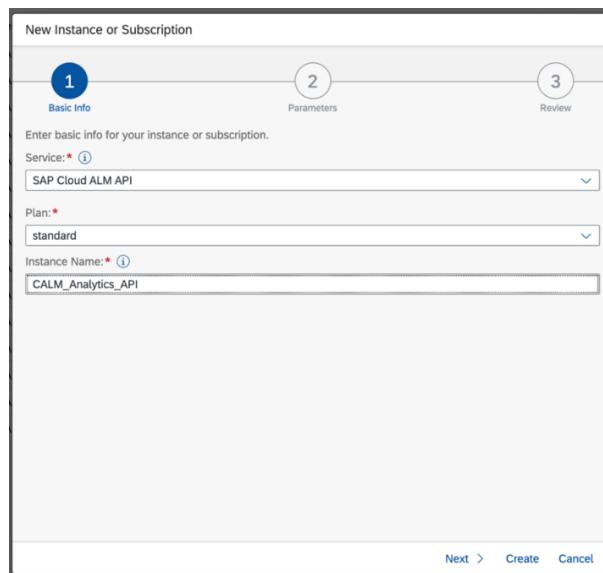


Figure 6: SAP Cloud ALM API Instance

- In addition, following scopes are also needed to access “Configuration and Security Analysis” data:

- calm-api.csa.read
- calm-api.csa.personal.read

Note: later scope provides access to personal data.

New Instance or Subscription

1 Basic Info 2 Parameters 3 Review

Configure instance parameters. ⓘ

Upload a JSON file:

Select JSON file Clear

Or specify the parameters in JSON format:

```

1+ {
2+   "xs-security": {
3+     "xsappname": "CALMAnalyticsAPI",
4+     "authorities": [
5+       "$XMASTERAPPNAME.calm-api.analytics.read",
6+       "$XMASTERAPPNAME.calm-api.analytics.providers.read",
7+       "$XMASTERAPPNAME.calm-api.demo-tasks.read",
8+       "$XMASTERAPPNAME.calm-api.projects.read",
9+       "$XMASTERAPPNAME.calm-api.tasks.read"
10+    ]
11+  }
12+ }
```

< Back Next > Create Cancel

- Create the Service Instance

New Instance or Subscription

1 Basic Info 2 Parameters 3 Review

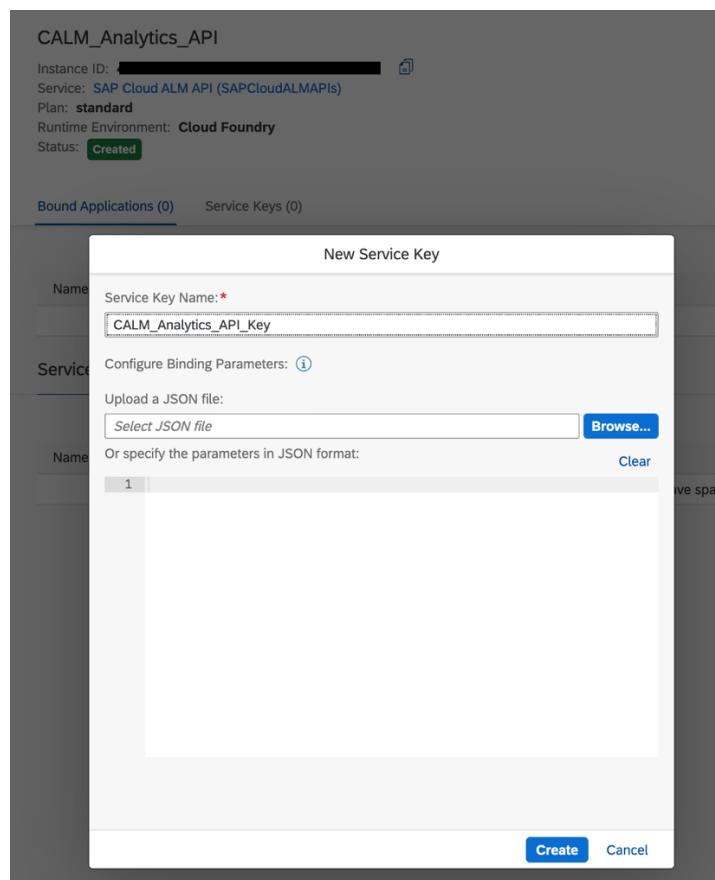
Review and verify the instance details.

CALM_Analytics_API
Service: SAP Cloud ALM API
Service Plan: standard

ⓘ Creating an instance might take a while.

< Back Create Cancel

- Create a key from the service instance by pressing the “Create” button.



- Extract the client, secret and URL from the new created key.

The screenshot shows the "Credentials" section for the "CALM_Analytics_API_Key". It displays a JSON object with various configuration parameters. The JSON content is as follows:

```

1 * {
2     "endpoints": {
3         "Api": "████████",
4     },
5     "uaa": {
6         "clientid": "████████",
7         "clientsecret": "████████",
8         "url": "https://ondemand.com",
9         "identityzone": "████████",
10        "identityzoneid": "████████",
11        "tenantid": "████████",
12        "tenantmode": "████████",
13        "sburl": "████████",
14        "apiurl": "████████",
15        "verificationkey": "-----BEGIN PUBLIC KEY-----████████"
}

```

At the bottom of the modal are "Copy JSON", "Download", and "Close" buttons.

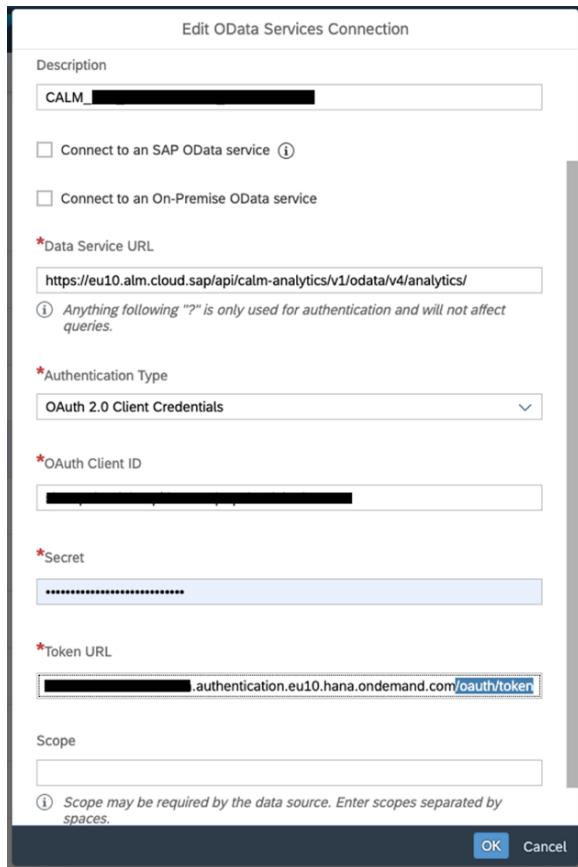
ii. Create SAP Analytics Cloud connection to SAP Cloud ALM tenant.

- In SAP Analytics Cloud create an OData Services connection.

- Enter the following parameters:

Configuration Item	Value	Comment
Data Service URL	https://eu10.alm.cloud.sap/api/alm-analytics/v1/odata/analytics/	Assumed that the tenant is in the European region EU10
Authentication Type	OAuth 2.0 Client Credential	
OAuth Client Id	<clientid>	retrieved from the service key (see above)
Secret	<clientsecret>	retrieved from the key (see above)
Token URL	<url> concatenated with path "/oauth/token"	url retrieved from the key (see above). Looks like: <a href="https://<subdomain>.authentication.<region>.hana.ondemand.com/oauth/token">https://<subdomain>.authentication.<region>.hana.ondemand.com/oauth/token
Scope	Leave this blank	

Table 4: OData Connectivity Data in SAP Analytics Cloud



iii. Connect the SAP Analytics Cloud Model to the SAP Cloud ALM Connection

- Open the delivered model “SAP_CC_Security_Configuration” and navigate to “Data Management”.
- Click the “Import Data” icon to create a new import. Select “OData Services” as source. Select the connection you created above from the drop-down list and click “Next”.

Import Data from OData Services

Target Model

*Model Name

▼

Select Data

*Connection

▼

Create a new query

Next Cancel

- Create a new query: select “DataSet” and press “Next”.

New Query for OData Services

Query Information

*Query Name

Build a Query

Freehand Query

Search



DataSet

Click to Deselect

DemoTasks

DynamicDataSet

Requirements

Back Next Cancel

- Select the data as shown below.

Edit OData Services Query

Selected Data (61)

[Clear Selection](#)

AA d10k	X	AA d10v	X	AA d11k	X	AA d11v	X	AA d12k	X	AA d12v	X
AA d13k	X	AA d13v	X	AA d14k	X	AA d14v	X	AA d15k	X	AA d15v	X
AA d16k	X	AA d16v	X	AA d17k	X	AA d17v	X	AA d18k	X	AA d18v	X
AA d19k	X	AA d19v	X	AA d1k	X	AA d1v	X	AA d20k	X	AA d20v	X
AA d2k	X	AA d2v	X	AA d3k	X	AA d3v	X	AA d4k	X	AA d4v	X
AA d5k	X	AA d5v	X	AA d6k	X	AA d6v	X	AA d7k	X	AA d7v	X
AA d8k	X	AA d8v	X	AA d9k	X	AA d9v	X	AA date	X	AA dayOfWeek	X
AA firstWeekDay	X	AA hour	X	AA m1k	X	AA m1v	X	AA m2k	X	AA m2v	X
AA m3k	X	AA m3v	X	AA minute	X	AA period	X	AA provider	X	AA query	X
AA resolution	X	AA tfrom	X	AA timestamp	X	AA timeZone	X	AA version	X	AA week	X
AA ID	X										

- Set filters and filter values as explained below.

Edit OData Services Query

Available Data

Selected Data (61)

[Clear Selection](#)

Select entire table (1)

DataSet

AA d10k

AA d10v

AA d11k

AA d11v

AA d12k

AA d12v

AA d13k

AA d13v

AA d14k

AA d14v

AA d15k

Filters

[Clear Selection](#)

AA resolution	Equal to	D	X
AA provider	Equal to	CCDB_STORE...	X
AA period	Equal to	L10D	X
AA query	Equal to	storeHasSecrec...	X

[Back](#) [Next](#) [Cancel](#)

Configuration Item	Value	Comment
provider	CCDB_STORE_DATA	The technical name of the data provider.
period	L10D	Selecting the data from the last 10 days. Note that you can also choose another period. It is recommended to use the last 2 days (L2D) which would

		work best for the current dashboard setup in SAP Analytics Cloud.
resolution	D	D stand for Days and is also relevant for the timeframes for the data extraction.
query	storeHasSecrec=X	<p>Note: to filter only the values which are relevant for cloud services the generic dimension D14 (storeHasSecrec) carries an "X" as a marker. In the filter settings of SAP Analytics Cloud this must be configured.</p> <p>E.g. for single values: query=storeHasSecrec=X</p> <p>E.g. for multiple values: query="storeHasSecrec=X+serviceId=f4f971bb-6109-400a-b776-297a641235f8"</p>

Table 5: Filter Settings in SAP Analytics Cloud

- The OData interface offers:
 - A set of predefined dimensions (provider, version, period...),
 - 30 generic dimensions (d1k/d1v, d2k/d2v...d20k/d20v) and
 - 15 generic measures (m1k/m1v, m2k/m2v... m10k/m10v).
 - Additional fields e.g., timestamp, version, ...
- Generic names ending with letter "k" contain the name of the key of this dimension or measure, while generic names ending with letter "v" contain the value of a dimension or measure.
- **Note:** The number of attributes for the SAP Analytics Cloud data model is restricted to 100 but the SAP Cloud ALM connection delivers more than 100 attributes. Therefore, data must be removed. For example, the attributes from D20 to D30 are not required since no data is provided from SAP Cloud ALM for the SAP Analytics Cloud dashboard.

Find more information on the interface and on the predefined dimensions [here](#)

- Set the Batch Size and press Create.

Query Batch Size

Batch Size:*

(i) Batch size corresponds to the number of records retrieved in a single request. [Learn more](#)

[Back](#) [Create](#) [Cancel](#)

Your Import Job is now created.

Next, you must define the Import Settings by clicking on the three dots on the right side of your import job, Edit, Import Settings.

- On the first screen, modify the data type of attributes m1v, m2v and m3v to Integer. Select the attribute, click on the cube icon and select data type Integer.

The screenshot shows the SAP Import Job Overview screen. At the top, it says "Source: DataSetQuery". Below that, there's a list of columns: "m3v". Under "Columns (1/1)", there's a row with "M3V" and a small icon. A red box highlights this icon. Below this, there's a "Details" tab. In the "Column Details" section, for the attribute "M1V", the "Data Type" is set to "Integer". A red box highlights the "Integer" option in a dropdown menu. Other options listed are "Date", "Number", "String", "Time", "Date and Time", and "Boolean".

- Click “Next” to continue.

To define the mapping of the import job, follow the steps below. Most of the mappings are already in place.

- Make sure to map “d20v” to “SAP_CC_SecConfig_CALMAPI” on this screen and press “Next”.

The screenshot shows the SAP Modeler interface for mapping data from a source CSV file ('NewDataForDemo.csv') to a target database. The 'Data Foundation (Facts)' tab is selected. The 'Source Columns' sidebar lists various attributes like AA_VersionVersion, AA_VersionCategory, AA_VersionType, DateDATE, AA_IDid, AA_IDDescription, AA_TFromId, AA_PeriodId, AA_PeriodDescription, AA_ResolutionId, AA_QueryId, AA_TimestampId, and WeekId. The 'Unmapped (0)' section is empty. The 'Mapped (16)' section contains 16 rows, each showing a source column and its target mapping. The row for 'AA D20V' is highlighted with a red circle, indicating it has been mapped to 'SAP_CC_SecConfig_CALMAPI'. Other mappings include DateDATE to Date, AA_IDid to ID, AA_TFromId to TFrom, AA_PeriodId to Period, AA_ResolutionId to Resolution, AA_QueryId to Query, AA_TimestampId to Timestamp, and WeekId to Week. The 'Mapping completed!' message at the bottom indicates all source data is mapped.

Source	Target
AA D20V BTP-DES-0002	SAP_CC_SecConfig_CALMAPI #, ARI-MFA-001, ARI-UMS-001, BTP-ALS-0001, BTP-CLC-0001
AA IDid GUID-00021	ID #, 005d6de0-db54-4bf1-8847-920e1435fa7, 032e8005-42
#2 TFromId 20240226000000	TFrom #, 20230726000000, 20230923000000, 20230928000000,
AA PeriodId L90D	Period #, L10D, L180D, L1D, L90D
AA ResolutionId D	Resolution #, D
AA TimezoneId +00:00	Timezone #, +00:00
AA ProviderId CCDB_STORE_DATA	Provider #, CCDB_STORE_DATA
AA Version_InternalId v1	Version_internal #, V1
AA QueryId #	Query #, L180D
#2 TimestampId 20240226000000	Timestamp #, 20230731000000, 20230801000000, 20230820000000,
WeekId	Week

- Map the remaining attributes to the “ID” dimension table by dragging and dropping the source column names to the corresponding targets and click ‘Next’ when done.

New features are available. Check them out.

SAP Modeler | NewDataForDemo.csv+ X

Map Properties General Actions

Source Columns Dimension Properties

Search... Search properties...

Public dimensions are excluded from the list below. To update their members and properties, manage your imports directly in each public dimension.

Source Column	Dimension Properties
AA D1Id	GUID-00021 Member ID #,005f6de0-db54-4bf1-8847-920e1a35fa7, 032e80d5...
AA IDDescription	(Empty Value) Description Unassigned, (Empty Value)
AA IDD1K	(Empty Value) D1K serviceType, (Empty Value)
AA IDD1V	(Empty Value) D1V SCP_CREDSTORE, (Empty Value)
AA IDD2K	(Empty Value) D2K serviceTypeLabel SAP Credential Store, SAP Destination Service, SAP Clo...
AA IDD2V	(Empty Value) D2V SAP Destination Service
AA IDD3K	(Empty Value) D3K serviceId, (Empty Value)
AA IDD3V	(Empty Value) D3V d50f681a-5640-4799-85c6-fee569e34273, 205ff04-ec0...
AA IDD4K	(Empty Value) D4K serviceName serviceName, (Empty Value)
AA IDD4V	(Empty Value) D4V Destination Service CredStore01Dev, CredStore02Dev, Destination Service, ...
AA D5K	(Empty Value) D5K serviceNameDesc, (Empty Value)
AA D5V	(Empty Value) D5V CredStore 01 Dev (CSA), CredStore 02 Dev (CSA), (Emp...
AA D6K	(Empty Value) D6K storeLscplid, (Empty Value)
AA D6V	(Empty Value) D6V d50f681a-5640-4799-85c6-fee569e34273, 205ff04-ec0...
AA D7K	(Empty Value) D7K storeLscpCaption, (Empty Value)
AA D7V	(Empty Value) D7V System CredStore01Dev, System CredStore02Dev, (Emp...
AA D8K	(Empty Value) D8K scid, (Empty Value)
AA D8V	(Empty Value) D8V S00150, (Empty Value)
AA D9K	(Empty Value) D9K sciDesc, (Empty Value)
AA D9V	(Empty Value) D9V Credential Configuration, (Empty Value)
AA D10K	(Empty Value) D10K storeId, (Empty Value)

Next Save and Exit Cancel

New features are available. Check them out.

SAP Modeler | NewDataForDemo.csv+ X

Map Properties General Actions

Source Columns Dimension Properties

Search... Search properties...

Public dimensions are excluded from the list below. To update their members and properties, manage your imports directly in each public dimension.

Source Column	Dimension Properties
AA D11K	(Empty Value) D11K storeNameExt, (Empty Value)
AA D11V	(Empty Value) D11V (Empty Value)
AA D12K	(Empty Value) D12K storeName, (Empty Value)
AA D12V	(Empty Value) D12V CRS_CONFIG, (Empty Value)
AA D13K	(Empty Value) D13K storeType, (Empty Value)
AA D13V	(Empty Value) D13V TABLE, (Empty Value)
AA D14K	storeHasSecrec (Empty Value) D14K storeHasSecrec, (Empty Value)
AA D14V	X D14V X, (Empty Value)
AA D15K	elementDate D15K elementDate, (Empty Value)
z2 D15V	20240226000000 D15V 20231208000000, 20231214000000, 20231206000000, ...
AA D16K	(Empty Value) D16K elementDateTo, (Empty Value)
AA D16V	(Empty Value) D16V 20231230000000, 20231227000000, 20231229000000, ...
AA D17K	elementModification D17K elementModification, (Empty Value)
AA D17V	INITIAL D17V INITIAL, UPDATED, (Empty Value)
AA D18K	elementStatus D18K elementStatus, (Empty Value)
AA D18V	CURRENT D18V CURRENT, OLD, (Empty Value)
AA D19K	itemSecRecStatus D19K itemSecRecStatus, (Empty Value)
AA D19V	COMPLIANT D19V COMPLIANT, NONCOMPLIANT, (Empty Value)
AA D20K	(Empty Value) D20K itemSecRecIndex, (Empty Value)
Drop a column	Map to preview D20V (Empty Value)
AA M1K	numChanges D19K numChanges, (Empty Value)
AA M2K	numStores D20K numStores, (Empty Value)

Next Save and Exit Cancel

- Check that there are no errors on the last screen.

The screenshot shows the SAP Modeler DataSetQuery interface. On the left, there's a sidebar with 'Review Import' and 'General' tabs, and a search bar. Below that is a 'Filter Issues' section with tabs for 'Source' and 'Target'. A message says 'No issues found'. The main area has tabs for 'Mapping Restrictions (0)', 'Dimension Restrictions (0)', and 'Data Quality Issues (0)'. Under 'Dimension Restrictions', it says 'Review the issues below to make sure these values aren't rejected.' A table shows columns for 'Source', 'Target', 'Issue', 'Values', and 'Records', with a note 'No issues found'. At the bottom, a green box says 'Data successfully validated' with a close button. A dark footer bar has 'Run Import' and 'Save and Exit' buttons.

- You can now run the import by pressing the “Run Import” button. To remove the delivered demo data from your system, change the “Import Method” to “Clean and replace selected version data”.

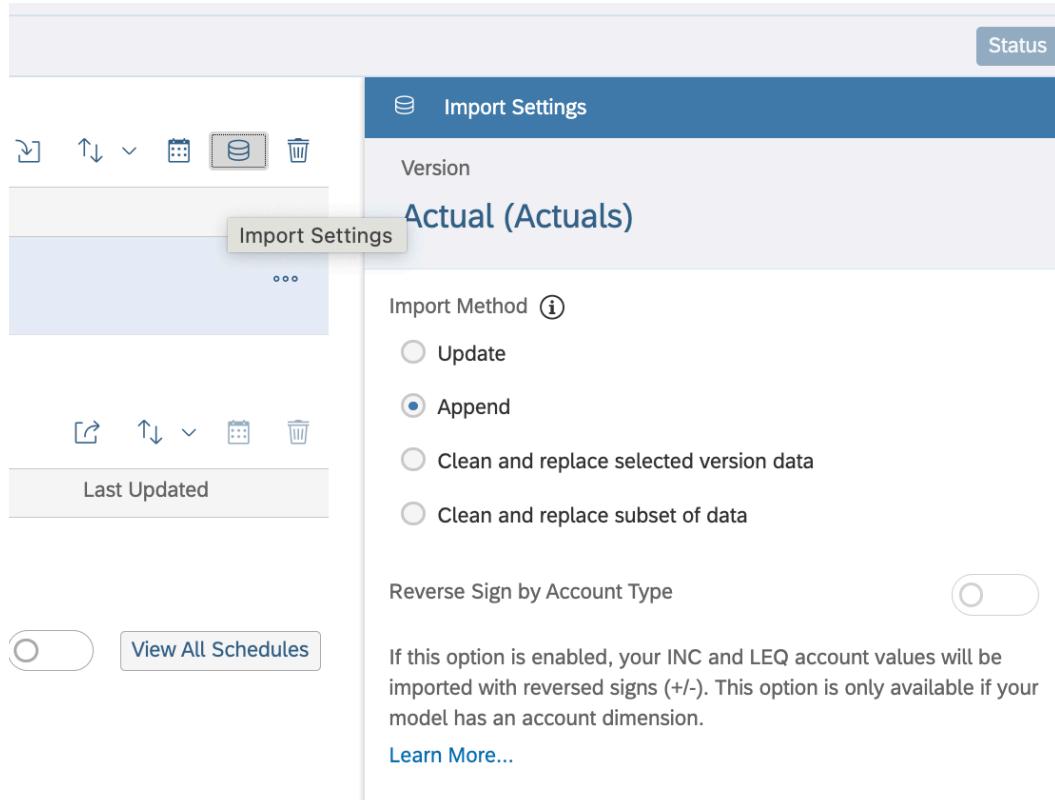
The screenshot shows the 'Job Settings' dialog. On the left, a sidebar has 'Import Settings' (set to 'Update') and 'Validation Settings' (set to 'None'). The main area is titled 'Import Settings: Import Method and Mapping Options'. It shows 'Import Method' with radio buttons for 'Update', 'Append', 'Clean and replace selected version data' (which is selected and highlighted with a red box), and 'Clean and replace subset of data'. Below that is a 'Mapping Options' section with three toggle switches: 'Reverse Sign by Account Type' (disabled), 'Update Local Dimensions with New Members' (disabled), and 'Replace Empty ID Cells with "#" Value' (disabled). A vertical scrollbar is visible on the right side of the dialog.

c. Schedule Data Import

Security configuration data needs to be imported regularly, e.g., once a day, to display up-to-date data in the SAP Analytics Cloud Security Dashboard. Please proceed as follows.

i. Import Settings

- Select your import job in the list and click the “Import Settings” icon. Choose the import method “Append” and press “Save”.



ii. Data Import Scheduling

To update the data in SAP Analytics Cloud, the Import Job created earlier needs to be scheduled as described in the [standard documentation](#).

iii. Scheduling Settings

- Choose the schedule icon in the data management view. Set the schedule as “Repeating” suiting your requirements and press Save.

Schedule Settings

[Set a Dependency](#)

Frequency

- None
- Once
- Repeating

Recurrence

Daily

Every Day(s)

Start Date:

End Date:

Time Zone:

Start Time (24-Hour Clock):

- Once the data import is scheduled, the overview will show the daily scheduled OData Service import.

Workspace

Data Management

Import / Export Jobs API Subscriptions

General Edit Data View Validation

Import Jobs (i)

Name	Query	Schedule	Last Run	Last Known Status
<input type="checkbox"/> DataSetQuery	DataSetQuery OData Services	Daily Every day at 22:51:00	Jan 19, 2024 16:16:15	✓ - ✓ - ✓ - ✓ - ✓

7. Result

With the provided sample files, it is possible to visualize some of the SAP Analytics Cloud Dashboard Template features, as shown in Figure 7 below. The story is prepopulated with sample data to provide an overview of the security dashboard capabilities to customers.

With the provided sample data files, compliance officers or a cloud security administrator, responsible for operations and security & compliance can use SAP Analytics Cloud dashboard template as central source of truth for gathering information to get analytical insights into the security status of their SAP Cloud Solutions and to identify a risk score.

As displayed in the example given in Figure 7, one can see that 5 cloud systems are connected to the dashboard and overall, 30 security controls are in place. For these security controls, 16 items are reported to the dashboard as non-compliant. Out of these 53% non-compliant items, one can notice 40% that are critical, 37% with a high criticality and 23% with medium items to solve. It is also worth noticing that over the last 24 hours no new items have been received; a security compliance officer might be interested in what happened on the last day, when the last input came in.

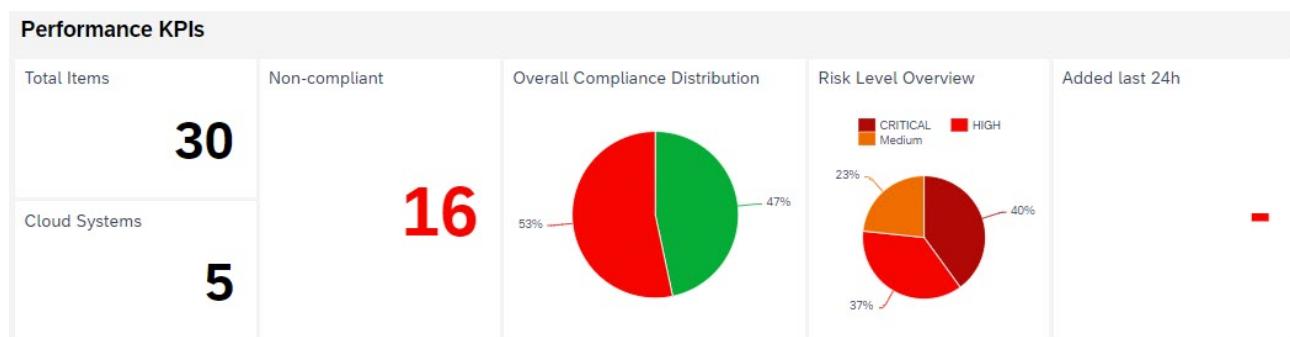


Figure 7: Example of SAP Analytics Cloud Compliance View

Figure 7 shows the following key figures:

- Total Items: Number of controls which are checked.
- Cloud Systems: Number of cloud systems which are connected and providing data
- Non-compliant: Total number of non-compliant items
- Overall Compliance Distribution: Percentage rate of compliant and non-compliant items
- Risk Level Overview: Percentage of Critical, High and Medium items of non-compliance
- Added last 24h: Items received during the last 24 hours

Dashboard Chart	Description
Compliance per Risk Level	Total number of risks including the compliance and non-compliance
Compliance per Cloud Application	Total number of compliance / non-compliance. Items per cloud solution
Compliance per Component	Total number of compliance / non-compliance Items per component of cloud solution
Compliance per Topic	Total number of compliance / non-compliance Items per topic as documented in the Cloud Security Recommendations
Compliance by Secure Operation Map	Total number of compliance / non-compliance Items per area of SAP´s secure operation map as documented in the Cloud Security Recommendations

Table 6: Description Compliance Status by Category

The visualization example in Figure 8 shows the different compliance status by different aggregation attributes. Overall, it displays the compliance status per categories like the risk level, or the cloud application that are affected and the components, the topics and the items spread over the SAP secure operations map.

The SAP Analytics Cloud dashboard template offers the possibility to click on any item and to drill-down to the related categories. For instance, one can spot the most critical non-compliant items and check which cloud application is the most affected.

Another view can provide more details on the component for instance Destination Service which contains the most non-compliant items to fix. The view on the topic would provide additional input, showing for instance, that the token lifecycle is impacted. Finally, the view of the compliance per SAP's secure operations map reflects which, in this case, Authentication & Sign-On is concerned.



Figure 8: Compliance View, Example 2

More visualization screens are also available, to facilitate the analysis of the security status of SAP Cloud Solutions.

8. SAP Analytics Cloud Dashboard Operations

a. Static Extension File Update

- The current data model provides a static extension file which delivers all the data which is not part of the SAP Cloud ALM Analytics API like described in Section 5.b).
- Based on the onboarding of new SAP Cloud Services over time an update of this file is needed. Use the corresponding Security Recommendation help pages (see Section 3) to update the static extension file.
- The static extension must be maintained in the SAP Analytics Cloud in the dimension table **SAP_CC_SecConfig_CALMAPI** of the SAP Analytics Cloud data model.
- The content of this data can also be updated using a fileserver (see [documentation here](#)) TODO add description how/where to retrieve file

b. Clean-Up Sample Data

- The provided SAP Analytics Cloud template is equipped with Sample Data. Please make sure that the sample data is deleted via the Data Management view once real cloud application data is received via the OData API.

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