Integration Guide | PUBLIC
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Integrating Risk and Opportunity Data

Integrating SAP Integrated Business Planning for Supply Chain 2402 and Higher with Everstream Analytics Using SAP Cloud Integration

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Content

1 Document History

The following table provides an overview of the most important changes in this document:

Version	Date	Description
1.2	2024-10-07	Updates to SAP Integrated Business Planning global configuration
1.1	2024-03-20	Updates to the Everstream Analytics security material
1.0	2024-02-02	Initial version

2 Introduction

In today's ever-changing and interconnected business environment, it's crucial for companies to identify and assess potential risks as soon as possible to ensure a resilient, reliable, and sustainable operation of their supply chains. They can't rely only on their internal data, they also need external information sources.

With the integration with Everstream Analytics, planners can use data to proactively address upcoming risks and avoid supply chain disruptions through early risk mitigation. Planners can import data, such as headlines, categories, and duration into SAP Integrated Business Planning for Supply Chain (SAP IBP) and set up customized alerts based on risk scores.

Data integration between SAP IBP and Everstream Analytics using the integration flows in the *SAP Integrated Business Planning for Supply Chain Integration with Everstream Analytics* package is available with SAP IBP 2402 and higher.

The integration package contains the following integration flows:

- The *Replicate Locations as Facilities in Everstream Analytics* and *Check Facilities and Assign to Facility Group in Everstream Analytics* integration flows read the SAP IBP location master data and replicate the data over to Everstream Analytics for monitoring and identifying incidents.
- The *Replicate Incidents and Incident Risk Score in SAP IBP* integration flow read the incidents from Everstream Analytics and send them with their score back to SAP IBP for integrating into the planning process.

3 Terminology Mapping

The following table lists the terms that are used in SAP IBP and the corresponding terms in Everstream Analytics:

SAP IBP Term	Everstream Analytics Term
Location **Note** Throughout this guide, the term location is used to represent a geographically located entity. In the SAPIBP1 sample planning area, such an entity is generally a location but it can also be customer master data.	Facility
Risk and opportunity	Incident
Risk score external	Incident risk score
-	Facility group

4 Prerequisites

Licenses

The following licenses are required for the integration:

- SAP Supply Chain Control Tower license
- SAP Integration Suite license
- Everstream Analytics license purchased on SAP Store. You must also be provided OAuth2 client credentials.

Required Information

Before starting the integration process, gather the system-specific information listed in the following table:

Type of Information Required	Details
Everstream Analytics tenant information	Access details provided by Everstream Analytics when purchased on SAP Store
SAP IBP system	Access details provided by your system administrator **Example** System ID: **ABC** URL: **https://myXXXXXX.scmibp.ondemand.com**

SAP Integrated Business Planning Configuration

SAP Best Practices for SAP Integrated Business Planning comes with a comprehensive out-of-the-box SAP IBP sample planning area for time-series based planning (SAPIBP1), which you can use as a reference to define your own planning area.

We recommend that you copy the SAPIBP1 sample planning area and create what is needed to extend the integration of incidents from Everstream Analytics into risks and opportunities in SAP IBP. This approach will allow you to use the recommended structures that are needed for the integration. Note that even if you

copy the sample planning area, you still need to make manual changes to the attributes used in the risk and opportunity and risk and opportunity type master data.

This guide explains the enhancements that are defined in the SAPIBP1 sample planning area and provides the minimum information needed to replicate the data in SAP IBP. It explains the standard integration for replicating data from the standard location master data as a reference. Since the SAP IBP model is flexible, the configuration can be different.

If you need to use a different or multiple master data types in the replication, such as customers, the master data entities must be adapted or duplicated to consider the different master data attributes.

Master Data for Replicating Locations to Everstream Analytics

Master data: <Your master data prefix>LOCATION (Simple type)

The location master data is the source for integrating geographically located sites from SAP IBP to Everstream Analytics. The latitude and longitude coordinates are required to define the geographical boundaries for the locations. With this information, the Everstream Analytics tenant can identify incidents that can impact these locations.

Attribute	Name	Key	Description Attribute	Type	Length
LOCID	*Location ID*	Yes	LOCDESCR	NVARCHAR	20
LOCDESCR	*Location Description*	-	-	NVARCHAR	60
GEOLATITUDE	*Geo Latitude*	-	-	DECIMAL	18.6
GEOLONGITUDE	*Geo Longitude*	-	-	DECIMAL	18.6
EXTRISKRELEVANT	*External Risk Relevant*	-	-	NVARCHAR	1 The integration can use this attribute to identify the locations to replicate. Additional rules can also be defined for the integration.

Master Data for Integrating Incidents from Everstream Analytics

Master data: <Your master data prefix>RISKOPP (Simple type)

Incidents identified in Everstream Analytics are replicated as risks and opportunities in SAP IBP. The following fields are used as part of the standard integration process:

Attribute	Name	Key	Description Attribute	Type	Length
ROPID	*Risk/Opp ID*	Yes	ROPDESCR	NVARCHAR	36

> **Note**
>
> If you copy the 2402 version of the SAPIBP1 sample planning area, the attribute length won't be automatically updated, you must adapt it manually. For the changes in the attribute length to be reflected in the planning area, you must activate the planning area.

Attribute	Name	Key	Description Attribute	Type	Length
ROPDESCR	*Risk/Opp Descr*	-	-	NVARCHAR	255 **Note** If you copy the 2402 version of the SAPIBP1 sample planning area, the attribute length won't be automatically updated, you must adapt it manually. For the changes in the attribute length to be reflected in the planning area, you must activate the planning area.
ROPTYPEID	*Risk/Opp Type*	-	-	NVARCHAR	20
ROPFAMILY	*Risk/Opp Family*	-	-	NVARCHAR	120
ROPREVISION	*Risk/Opp Revision*	-	-	INTEGER	
ROPCHANGEDDATE	*Risk/Opp Changed Date*	-	-	TIMESTAMP	
ROPSTARTDATE	*Risk/Opp Start Date*	-	-	TIMESTAMP	
ROPENDDATE	*Risk/Opp End Date*	-	-	TIMESTAMP	
ROPDURATION	*Risk/Opp Duration*	-	-	TIMESTAMP	

Master data: <Your master data prefix>ROPTYPE (Simple type)

If you reuse the <Your master data prefix>RISKOPP master data, ROPTYPEID is a required attribute, and a value needs to be defined in the ROPTYPE master data.

Attribute	Name	Type	Length
ROPTYPEID	*Risk/Opp Type*	NVARCHAR	20
ROPTYPEDESCR	*Risk/Opp Type Descr*	NVARCHAR	20

The master data needs to have the following values that are set up for the *Risk/Opp Type – Value* parameter in the Replicate Incidents and Incident Risk Score in SAP IBP [page 17] integration flow:

- ROPTYPEID = **EARISK**
- ROPTYPEDESCR = **Everstream Analytics**

Master data: <Your master data prefix>LOCRISKOPP (Compound type)

Master data type: <Your master data prefix>LOCATION, <Your master data prefix>RISKOPP, Attributes: LOCID, ROPID

The compound master data is used to identify a location and risk and opportunity combination available in Everstream Analytics.

Planning Area Configuration

Planning Level: Day | Risk/Opp ID | Location ID

The root for the integration needs to be defined at the *Day*, *Risk/Opp ID* (ROPID), and *Location ID* (LOCID) planning level. Optionally, other time profile level and attributes from the <Your master data prefix>LOCATION and <Your master data prefix>RISKOPP master data can be included for reporting purposes.

It's important to specify the compound master data <Your master data prefix>LOCRISKOPP in the tight coupling for planning objects because the integration uses the master data to remove planning object combinations that don't exist. For more information, see Creating Planning Levels.

Key Figure: External Risk Score

A new key figure *External Risk Score* (RISKSCOREEXT) needs to be set up at the *Day | Risk/Opp ID | Location ID* planning level and will be used to save the score for the incident. The score is provided with a value from 1 to 25. It's a non-editable stored key figure with aggregation mode *Max*. It can be configured to be used in all versions of the planning area. The display settings can be set to 0 decimal points.

Communication Scenario IBP External Planning Data Integration

The following OData services are used by the integration to read and write data in SAP IBP:

- Master data OData service
- Key figure OData service

For consuming these OData services from outside SAP IBP, a communication arrangement needs to be defined for the *IBP External Planning Data Integration* (SAP_COM_0720) communication scenario. A communication system and a communication user need to be created and a basic authentication needs to be set up for this integration. For more information, see Integrating Key Figure and Master Data. You need to store the user credentials in the security material of SAP Cloud Integration using a credential name that will then be used by the integration flows.

Global Configuration

The OData services used in this integration require the following global configuration to read and write the external data into the system:

Global Configuration Parameter	Description
`RELEVANT_MDT_FOR_MD_API`	Make sure that the following master data types of your planning area are included: • **`<Your master data prefix>LOCATION`** • **`<Your master data prefix>RISKOPP`** • **`<Your master data prefix>LOCRISKOPP`**
`PLANNINGAREA`	Add the planning area to be used for the integration process.
`ENABLE_NULL_INFO`	Make sure it's set to **`TRUE`** to read and write null values in the planning area.

Cloud Integration Configuration

Before you can use the integration flows, you need to make some configuration settings to manage security. For more information, see Managing Security Material.

SAP IBP User Credential as Security Material

Create user credentials with a name and the user credentials created in the communication system and user setup for the communication arrangement for the *IBP External Planning Data Integration* (`SAP_COM_0720`) communication scenario. For more information, see Deploying a User Credentials Artifact.

Everstream Analytics OAuth2 Client Credentials as Security Material

Create an OAuth2 client credential with a name and the token service URL, client ID, and client secret that were provided by Everstream Analytics during registration and account on-boarding. This security material name is needed in the configuration of the integration flows. For more information, see Deploying an OAuth2 Client Credentials Artifact.

Example

Security material configuration:

Attribute	Description
Name	**`Everstream_Analytics_OAuth`**
Description	**`Everstream_Analytics_OAuth`**

Attribute	Description
Token Service URL	**`https://api.us1.apps.everstream.ai/v2/oauth/token/`** or as provided by Everstream Analytics during registration and account on-boarding
Client ID	As provided by Everstream Analytics during registration and account on-boarding
Client Secret	As provided by Everstream Analytics during registration and account on-boarding
Client Authentication	**`Send as Body Parameter`**
Content Type	**`application/x-www-form-urlencoded`**

5 Integration Flows

The integration between SAP IBP and Everstream Analytics relies on the following integration flows:

- The *Replicate Locations as Facilities in Everstream Analytics* and *Check Facilities and Assign to Facility Group in Everstream Analytics* integration flows read the SAP IBP location master data and replicate the data over to Everstream Analytics for monitoring and identifying incidents.
  Note that the *Check Facilities and Assign to Facility Group in Everstream Analytics* integration flow is only getting called by the *Replicate Locations as Facilities in Everstream Analytics* integration flow using a process direct adapter. You can configure the integration flows in the order you like but you must deploy the *Check Facilities and Assign to Facility Group in Everstream Analytics* integration flow first and then deploy the *Replicate Locations as Facilities in Everstream Analytics* integration flow.
- The *Replicate Incidents and Incident Risk Score in SAP IBP* integration flow read the incidents from Everstream Analytics and send them with their score back to SAP IBP for integrating into the planning process.

> **Note**
>
> Throughout this guide, the term location is used to represent a geographically located entity. In the SAPIBP1 sample planning area, such an entity is generally a location but it can also be customer master data.

It's possible to integrate multiple systems and multiple planning areas using different master data into the same Everstream Analytics system. To allow such multiple integrations, the location from SAP IBP needs to be made unique as a facility in Everstream Analytics. The location ID needs to be unique for the master data and the SAP IBP system. The parameters of the integration flow are used to create facilities with the following format: `<Integration Prefix><Separator><Master Data Prefix><Location Master Data><Separator><Location ID>`. These facilities are grouped in a facility group using the following format: `<Integration Prefix><Separator><Master Data Prefix><Location Master Data>` to make it easier to read and find in case multiple integrations are being done in the same system.

> **Example**
>
> If the following parameters have been set up: *Separator* = `-` , *Integration Prefix* = `PRODSYS`, *Master Data Prefix* = `IBP`, *Location Master Data* = `LOCATION`, *Location ID* = `LOC1`, `LOC2`, `LOC3`, the following facilities are created: `PRODSYS-IBPLOCATION-LOC1`, `PRODSYS-IBPLOCATION-LOC2`, and `PRODSYS-IBPLOCATION-LOC3` and the following facility group are created: `PRODSYS-IBPLOCATION`.

It's important that the integration flows defined for one planning area have the same naming and separator so that they can be read from one integration flow to the other.

Replication of Locations in Everstream Analytics

SAP IBP location data needs to be replicated as facilities in Everstream Analytics so that incidents and incident risk score is monitored. This integration flow read the locations from SAP IBP, compare them with

the facilities in Everstream Analytics and send updates to synchronize the data between the systems. In the sample planning area, the location master data has been enhanced with an indicator to easily identify locations that are relevant for the integration with Everstream Analytics. The standard integration uses this indicator to identify if a location needs to be sent to Everstream Analytics.

The process of synchronizing locations with Everstream Analytics is done using two integration flows, one for posting the changes and one for checking the updates.

Replicate Locations as Facilities in Everstream Analytics

This integration flow extracts the SAP IBP locations that match the filter query parameter, compares the locations to the existing facilities in Everstream Analytics and posts updates asynchronously for processing.

Parameters

Parameter Name	Description	Sample Value
Main Flow Timer	Integration flow scheduler to run the integration periodically	**`Run Once`**
Receiver	Timeout for SAP IBP using OData adapter in minutes. Ttimeout for Everstream Analytics using HTTP adapter in milliseconds. When multiple versions of the integration flows are being deployed, the address of the receiver process direct adapter `CheckFacilitiesAndAssignTofacilityGroupInEverstreamAnalytics` must be unique and match the address of the sender process direct adapter `ReplicateLocationsAsFacilitiesInEverstreamAnalytics`.	**`7`** **`60000`** **`CallEverstreamAnalytics`**
Everstream Analytics Credential Name	Name of the security material you created for storing the Everstream Analytics OAuth2 client credentials in the Cloud Integration Configuration [page 11] section.	**`Everstream_Analytics_OAuth`**
Everstream Analytics Hostname	Hostname for your Everstream Analytics tenant	**`api.us1.apps.everstream.ai`**
Filter Query	Filter query for reading the master data	**`EXTRISKRELEVANT = 'X'`**
IBP Credential Name	Name of the security material you created for storing the SAP IBP user credentials created in the communication user setup in the Cloud Integration Configuration [page 11] section.	**`MYXXXXXX_API_USER`**

Parameter Name	Description	Sample Value
IBP Hostname	URL of the SAP IBP OData service based on your instance that was created during the communication arrangement setup	**myxxxxx-api.scmibp.ondemand.com**
Integration Prefix	Prefix for the replication in case multiple SAP IBP systems connect to one Everstream Analytics instance	**PRODSYS**
Latitude	Latitude attribute in SAP IBP	**GEOLATITUDE**
Location Description	Name of the location	**LOCDESCR**
Location ID	Location ID attribute in SAP IBP	**LOCID**
Longitude	Longitude attribute in SAP IBP	**GEOLONGITUDE**
Master Data for Locations	Name of the location master data without the prefix	**LOCATION**
Master Data Prefix	Name of the master data prefix, for example, if the master data is `IBPLOCATION`, the prefix will be `IBP`	**IBP**
Separator	To make the facilities unique in Everstream Analytics, the system concatenates the prefix, the master data, and the location value. The separator needs to be the same in the integration flow.	**-**
Transaction Handling	Enable or disable transaction handling for database operations in the integration flow. To enable transaction handling, the value must be **Required**, otherwise, it is blank.	**Required**

Check Facilities and Assign to Facility Group in Everstream Analytics

This integration flow is called automatically after the successful execution of the first integration flow to check the status of the processing in Everstream Analytics. It needs to be parameterized and deployed. The integration flow checks the processing status until all the locations have been processed. Because of the asynchronous nature of the execution, the creation of the locations as facilities in Everstream Analytics can take some time. The integration is using a logic to check the locations that are not yet created by waiting and reprocessing the entries until they are created. The locations are represented as facilities in Everstream Analytics and are assigned to a facility group.

Parameters

Parameter Name	Description	Sample Value
Sender	When multiple versions of the integration flows are being deployed, the address of the sender process direct adapter `ReplicateLocationsAsFacilitiesInEverstreamAnalytics` must be unique and match the address of the receiver process direct adapter `CheckFacilitiesAndAssignTofacilityGroupInEverstreamAnalytics`.	**`CallEverstreamAnalytics`**
Receiver	Timeout for Everstream Analytics using HTTP adapter in milliseconds.	**`60000`**
Everstream Analytics Credential Name	Name of the security material you created for storing the Everstream Analytics OAuth2 client credentials in the Cloud Integration Configuration [page 11] section.	**`Everstream_Analytics_OAuth`**
Everstream Analytics Hostname	Hostname for your Everstream Analytics tenant	**`api.us1.apps.everstream.ai`**
Initial Delay for Fewer Locations (in secs)	Delay for doing delta uploads for less than 30 locations. This overrides the existing initial delay based on load size.	**`30`**
Integration Prefix	Prefix for the replication in case multiple SAP IBP systems connect to one Everstream Analytics instance	**`PRODSYS`**
Master Data for Locations	Name of the location master data without the prefix	**`LOCATION`**
Master Data Prefix	Name of the master data prefix, for example, if the master data is `IBPLOCATION`, the prefix will be `IBP`	**`IBP`**
Separator	To make the facilities unique in Everstream Analytics, the system concatenates the prefix, the master data, and the location value. The separator needs to be the same in the integration flow.	**`-`**

Replicate Incidents and Incident Risk Score in SAP IBP

This integration flow is used to replicate the incidents and incident risk score affecting the locations that were replicated in Everstream Analytics. It posts the master data and key figure information in SAP IBP. The call processes changes since the last successful run of the integration flow, thus reducing the amount of data being exchanged between the systems.

The default integration replicates new and updated information in SAP IBP as follows:

- Incidents as risks and opportunities master data (`<Your master data prefix>ROTYPE`).
- Facilities affected by the incidents as location and risk/opportunity compound master data (`<Your master data prefix>LOCRISKOPP`).
- Incident risk score for the affected facilities as the *Risk Score External* (`RISKSCOREEXT`) key figure at the planning level *Day | Risk/Opp ID | Location ID*.

Parameters

Parameter Name	Description	Sample Value
Main Flow Timer	Integration flow scheduler to run the integration periodically	**`Run Once`**
Receiver	Timeout for SAP IBP using OData adapter in minutes. Timeout for Everstream Analytics using HTTP adapter in milliseconds.	**`7`** **`60000`**
Everstream Analytics Credential Name	Name of the security material you created for storing the Everstream Analytics OAuth2 client credentials in the Cloud Integration Configuration [page 11] section.	**`Everstream_Analytics_OAuth`**
Everstream Analytics Hostname	Hostname for your Everstream Analytics tenant	**`api.us1.apps.everstream.ai`**
IBP Credential Name	Name of the security material you created for storing the SAP IBP user credentials created in the communication user setup in the Cloud Integration Configuration [page 11] section.	**`MYXXXXXX_API_USER`**
IBP Hostname	URL of the SAP IBP OData service based on your instance that was created during the communication arrangement setup	**`myxxxxx-api.scmibp.ondemand.com`**
Integration Prefix	Prefix for the replication in case multiple SAP IBP systems connect to one Everstream Analytics instance	**`PRODSYS`**

Parameter Name	Description	Sample Value
Location ID	Location ID attribute in SAP IBP	**LOCID**
Master Data for Location Risks/Opps	Master data for location risks and opportunities	**LOCRISKOPP**
Master Data for Locations	Name of the location master data without the prefix	**LOCATION**
Master Data for Risks/Opps	Master data for risks and opportunities	**RISKOPP**
Master Data Prefix	Name of the master data prefix, for example, if the master data is `IBPLOCATION`, the prefix will be `IBP`	**IBP**
Planning Area	Name of the planning area where the risk score is replicated	
Risk Score	Incident risk score from 1 to 25	**RISKSCOREEXT**
Risk/Opp Changed Date	Date on which the incident was changed	**ROPCHANGEDDATE**
Risk/Opp Description	Incident headline	**ROPDESCR**
Risk/Opp End Date	Date on which the incident will end	**ROPENDDATE**
Risk/Opp Family	Incident family	**ROPFAMILY**
Risk/Opp ID	Incident ID	**ROPID**
Risk/Opp Revision	Revision of the incident	**ROPREVISION**
Risk/Opp Start Date	Date on which the incident started	**ROPSTARTDATE**
Risk/Opp Type	Incident type	**ROPTYPEID**
Risk/Opp Type - Value	Value of the risk and opportunity type that will be used to identify Everstream Analytics incident data as defined in the Master Data: <Your master data prefix>ROPTYPE (Simple type) [page 9].	**EARISK**
Separator	To make the facilities unique in Everstream Analytics, the system will concatenate the prefix, the master data, and the location value. The separator needs to be the same in the integration flow.	**-**

6 Restrictions of the Integration

Note the following restrictions of the integration:

- Incidents from Everstream Analytics can have characters that are not supported. They are removed during the integration.
- The integration doesn't support sending the key figure to versions other than the base version.
- The integration can't load version-specific master data.
- The integration supports sending only one master data type as a facility.
- The integration has to be done at the day planning level.
- *Driver-Based Planning* can be used to visualize the data integrated from Everstream Analytics. However, users can add new values when visualizing the key figures because of the tight coupling to the compound master data that is not managed by the app.

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