SAP Best Practices **PUBLIC**

SAP S/4 Hana on premise edition – Social Intelligence

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SAP Social Intelligence Data Harvesting from Twitter

Configuration Guide

Copyright

Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Typographic Conventions

Type Style	Description
Example text	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation.
Example text	Emphasized words or phrases in body text, titles of graphics and tables.
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
`Example text`	Screen output. This includes file and directory names and their paths, messages, source code, names of variables and parameters as well as names of installation, upgrade and database tools.
`EXAMPLE TEXT`	Keys on the keyboard, for example, function keys (such as `F2`) or the `ENTER` key.
Example text	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.

Table of Contents

SAP Social Intelligence Data Harvesting from Twitter: Configuration Guide

1 Purpose

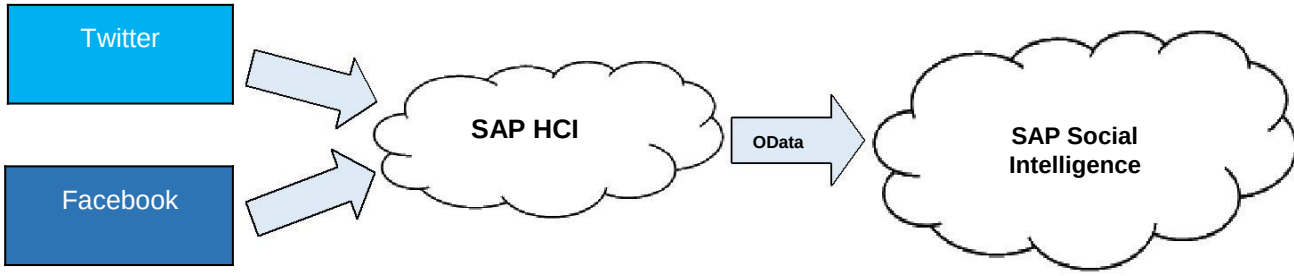
The purpose of this document is to describe the general configuration steps required to manually set up the configuration within the system landscape that has already been installed using the corresponding installation or configuration guides for installation.

1.1 Overview

This integration package implements an integration of social media channel into SAP Social Intelligence. It allows you to load and analyze social media data from Facebook and Twitter into SAP Social Intelligence system.

This integration package runs on the SAP HANA Cloud Integration (HCI) tenant and connects to the SAP Social Intelligence system through OData service. The APIs from Facebook and Twitter are connected with the new Facebook and Twitter HCI adapters.

The following figure illustrates the integration flow:



2 Preparation

2.1 Prerequisites

Before the integration content can be configured and used in your SAP HCI tenant, the API configuration for the social media channels needs to be done. These steps need to be done in the Twitter or Facebook account. Please keep in mind that the step order or buttons/links can have different description as mentioned in the chapters below. Twitter and Facebook can change their documentation and processes so it might be necessary to check their documentation how to set up the API access in the correct way.

Please also make familiar how to get and start with SAP HCI usage:

https://proddps.hana.ondemand.com/dps/d/preview/93810d568bee49c6b3d7b5065a30b0ff/2015.07_CORR/en-US/frameset.html?60359ca5fa9545149d279494320b6a5a.html

2.2 Social Media Channels

Use

To describe the general steps required to request the key or token required for authorization of social media channel APIs.

Some social media channels **often change their web page and process to get the needed keys and tokens**. The following descriptions are based on their web pages and processes as on March 1st, 2015.
To create an account and to register as developer, **you need to have a valid email address**.

On some social media channels, you also **need a valid (mobile) phone number** to validate your address. For more information, please refer to the official web page of the related social media channel.

2.2.1 Apply Authorization for Twitter API 1.1

Procedure

1. Go to the Twitter developer site (for example, https://dev.twitter.com/)
2. Choose *Manage Your Apps* link under *TOOLs* group (at bottom of the web page)
3. Log on with your Twitter account or create a new account by choosing the *Sign in* link
4. Choose *Create New App*
5. Fill out the form. For *Sentiment Intelligence* all fields are only needed internally for administration purposes
   a. *Name*: Any name that identifies this Application
   b. *Description*: Any Information of this Application
   c. *Website: Your application's publicly accessible home page*
   d. Callback URL: Optional
6. Read and accept the *Developer Agreement* by selecting the *Yes I agree* checkbox

   Be aware that you have registered a mobile number in your user's profile settings. Without a mobile number, you are not able to register an app.
7. Submit the form by choosing *Create your Twitter application*.

   An application is created and registered.
8. Choose *Keys and Access Tokens* tab, your *Consumer Key* and *Consumer Secret* are created; note them down for further configuration steps
9. In *Your Access Token* section under *Token Actions*, choose *Create my access token* button.

Your *Access Token* and *Access Token Secret* are created; note them down for further configuration steps.

2.3 SAP Social Intelligence System Information

The user needs to have the following requirements:

- SAP Business Suite Foundation 748 SPS01 onwards
- *SMI_AUTH* authorization should be added to user role to view and consume social data models. Below are the steps required to assign *SMI_AUTH* authorization to your user role:
  1. To start role maintenance, either choose *Create Role* in the *SAP Easy Access Menu -> Tools -> Administration -> User Maintenance -> Role Administration -> Role* or go to transaction *PFCG*.
  2. Enter the name of the role (for example, *SMI_ROLE*) and Choose *Create.* Enter the role description, for example, the activities contained within it.
  3. Choose the *Authorizations* tab to generate the profile for the role.
  4. Under the *Edit Authorization Data and Generate Profiles* section, choose *Change Authorization Data*. A *Choose Template* dialog box opens. Select the *Do not select templates* button.
  5. Choose the *Manually* icon from the icon bar. A *Manual selection of authorizations* dialog box opens.
     - Enter the authorization object *SMI_AUTH* in the dialog box. The system automatically maintains the authorization fields of the role.
  6. Maintain the authorization values by expanding the object classes and click on the white field to the right of the authorization field name.
  7. Select the authorization values as Create, Change, Display, and Delete. Choose *Save*.
  8. Generate an authorization profile for the authorizations. To do this, Choose *Generate*.
     - You are prompted for an authorization profile name. A valid name in the customer namespace is proposed.
  9. Save your entries.

3 Configuration

The *SAP Social Intelligence Data Harvesting from Social Media Channels* integration package consists of the three iFlows:

1) OData Integration Flow for Subjects

In this iFlow, OData stores the parameters required to read the subjects defined in the SAP Social Intelligence system.

2) OData Integration Flow for Social Posts

In this iFlow, OData stores the parameters required to create the social post entries in the Social Intelligence application tables.

3) Integration Flow for Harvesting Twitter Data

You use this iFlow to harvest the Twitter data into the Social Intelligence receiver system. In this iFlow, you will set up the Twitter credentials.

The configuration is structured in the following order:

- Installation and configuration of Eclipse Integration Designer
- Deployment of Credentials

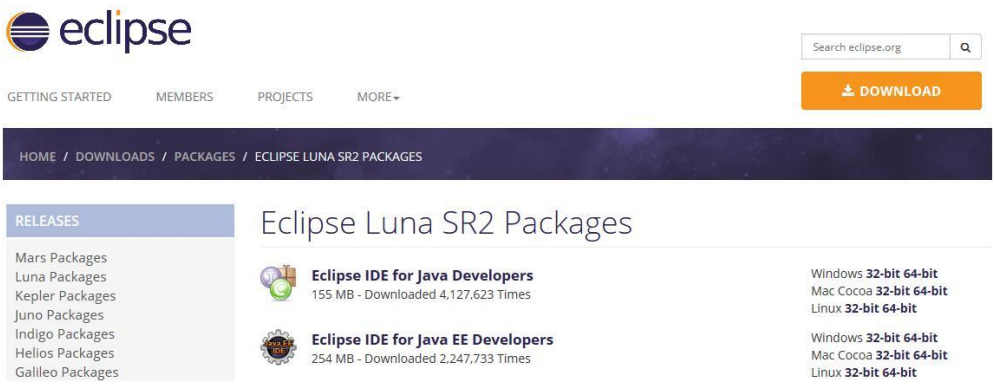
- Deployment and configuration of the *SAP Social Intelligence Data Harvesting from Social Media Channels* package.

3.1 Installation and configuration of Eclipse Integration Designer

1. Download the Eclipse

   Go to the URL http://www.eclipse.org/downloads/packages/release/Luna/SR2 to download the Eclipse IDE for Java EE Developers. (Choose the appropriate version according to your operation system e.g. Windows 32-bit/Linux 64-bit)

   The following is the main Luna packages site.

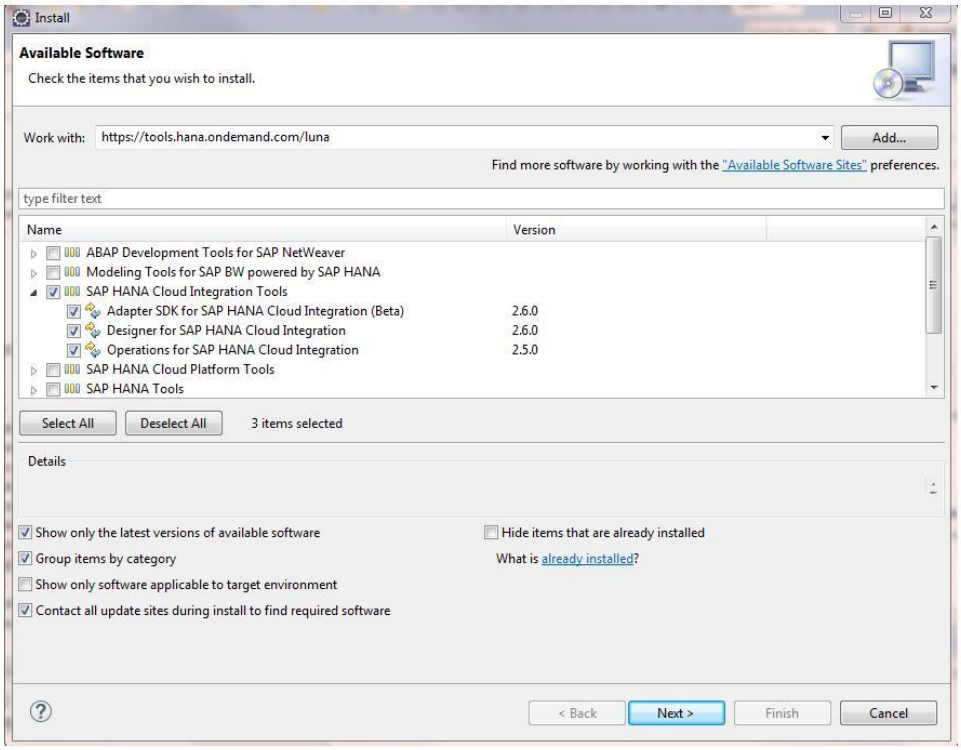


2. Unzip the downloaded file to your folder.

3.1.1 Install HCI Add-on

1. Open the Eclipse.
2. In the Welcome page, open the Developer's Workbench.
3. From the main menu, choose *Help* → *Install* → *New Software*...
4. In the Available Software page of the Install wizard, add the update site URL *https://tools.hana.ondemand.com/luna.*
5. Select the *SAP HANA Cloud Integration Tools* category.
6. Check that the following three options are checked:

   - Show only the latest version of available software
   - Groups items by category
   - Contact all update sites during install to find required software.



7. Choose *Next*.
8. Check the following features selected for installation and choose *Next*.
   SAP HANA Cloud Integration Tools:
   - Adapter SDK for SAP HANA Cloud Integration
   - Designer For SAP HANA Cloud Integration
   - Operations for SAP HANA Cloud Integration
9. Accept the terms of licensing agreement and choose *Finish*.
10. Restart the Eclipse IDE.

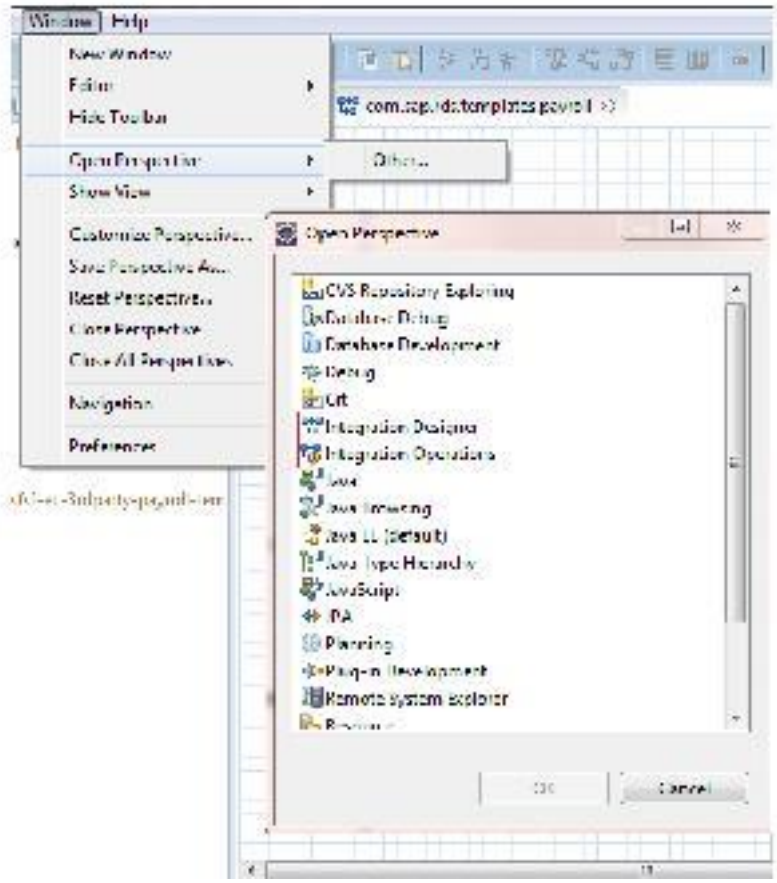
3.1.2 Add HCI Perspectives

A perspective is useful in organizing various eclipse views around the editor area, these are also helpful in managing menus and toolbars. The SAP HCI Add-On provides 2 perspectives:

- Integration Designer: The Integration Designer perspective provides integration tools on the Eclipse platform to model integration flows, configure attributes of the integration flows, and deploy them to the runtime.
- Integration Operations: The Integration Operations perspective provides functions for performing administrative tasks related to SAP HANA Cloud Integration (SAP HCI) runtime clusters and to message monitoring.

To add both perspectives:

1. In the main menu, choose *Windows* → *Open Perspective* → *Other...* .
2. In the *Open Perspective* dialog, select the *Integration Designer*
3. Choose OK.
4. In the main menu, choose *Windows* → *Open Perspective* → *Other...* .
5. In the *Open Perspective* dialog, select the *Integration Operations*.
6. Choose OK.

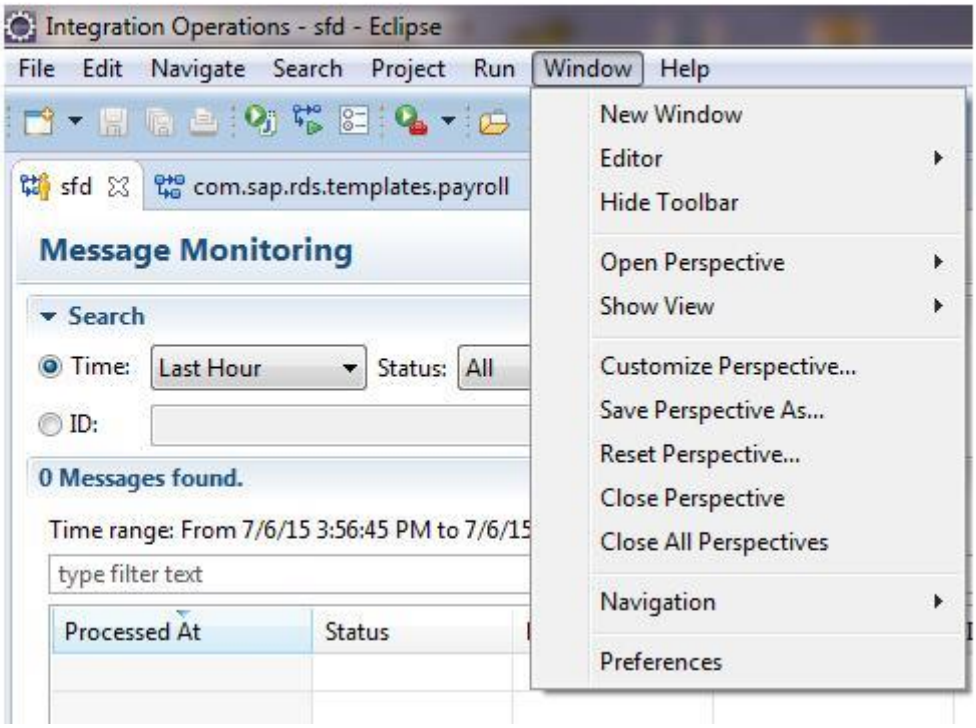


You can now switch perspective by choosing *Integration Operations* or *Integration Designer* in the top right.

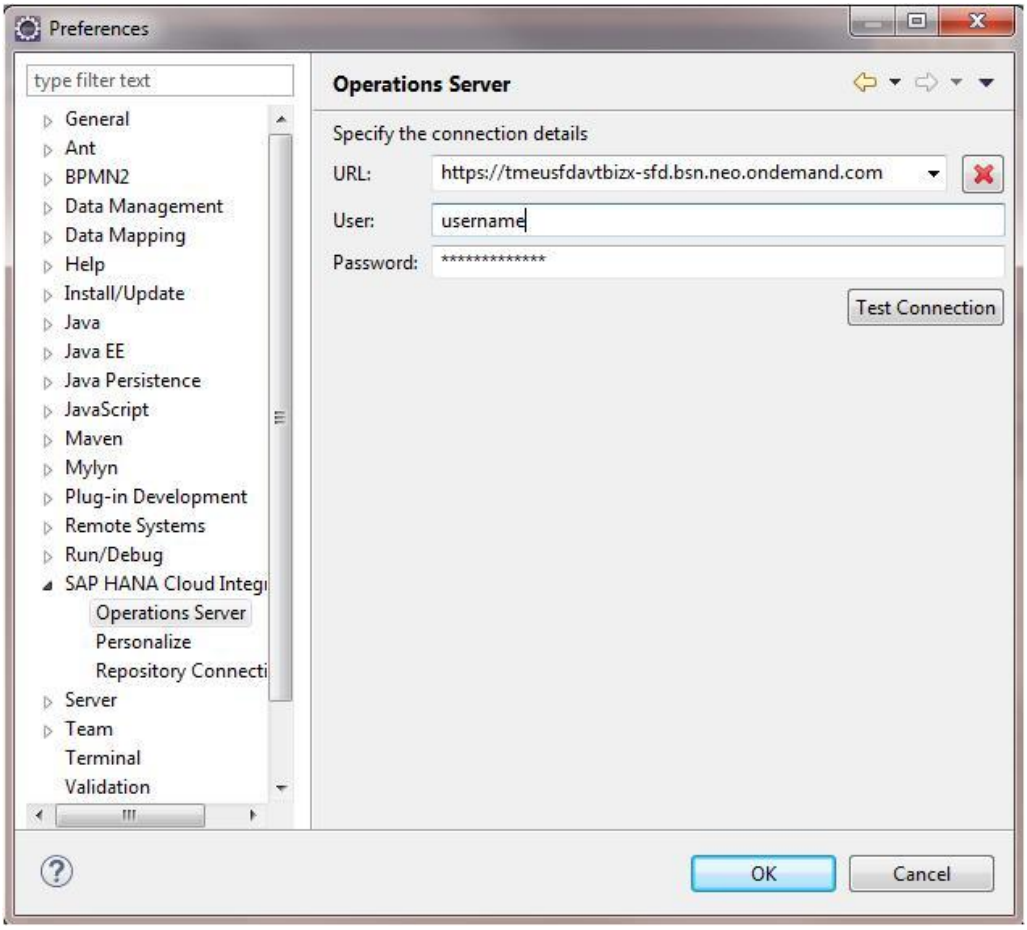
3.1.3 Eclipse HCI Connection Setup

Once the HCI add-on for Eclipse is installed, you can use it to connect to HCI tenant, in which you can do development as well as tenant management.

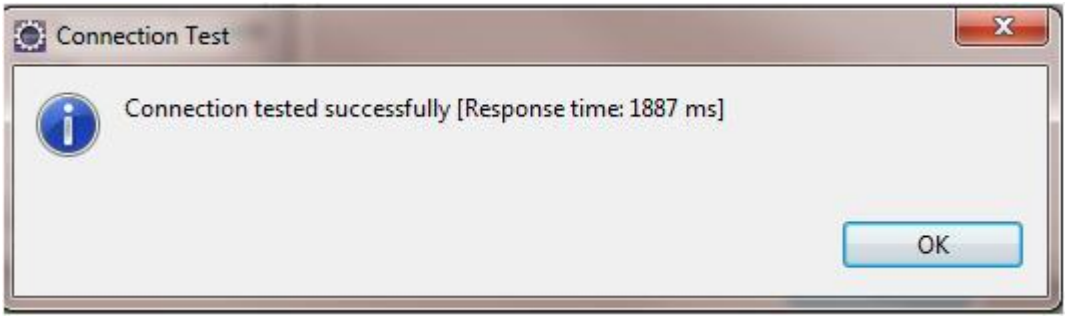
1. To carry out the activity, you should go to the Eclipse with the HCI add-on.
2. For Windows/Linux:Select Menu item *Window* → *Preferences.*
   For Mac OS X:Select Menu item *Eclipse* → *Preferences (Mac OS X).*



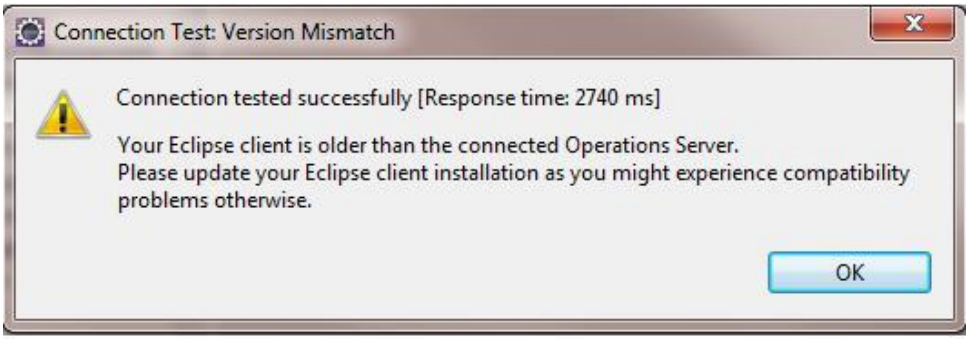
3. On the *Preferences* screen, Select *SAP HANA Cloud Integration → Operations Server*
   Enter the server URL, User and Password for Operations Server.



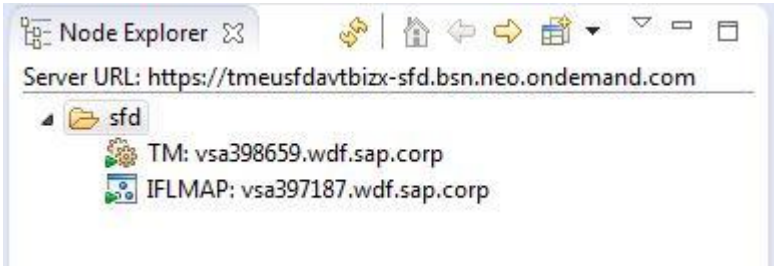
4. Choose *Test Connection.* The following screen shows up if connection to Operations Server is good.



If you get Version Mismatch prompt, go to chapter 2.1.2 to have the latest Add-on installed.



5. Save the Operations Server by choosing *OK* twice. Switch to the Integration Operations Perspective. In the *Node Explorer* window, the newly connected Operations Server will be shown.



If you cannot see the window you can choose *Window* → *Show view* → *Other* and then type filter text *Node Explorer* to open the *Node Explorer* window.

3.2 Deployment of Keystores

Now you will deploy the Twitter or Facebook credentials via Eclipse. For communication with your S/4 HANA Cloud Marketing system you also need to deploy the user/password as User Credential Artifact on your HCI tenant.

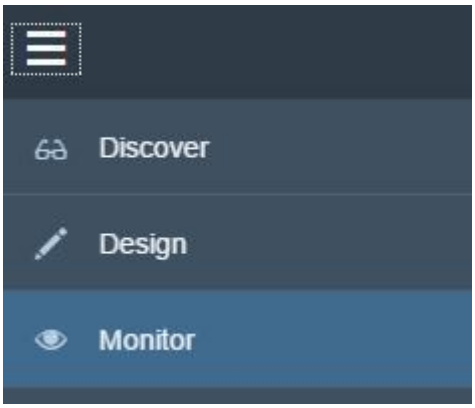
3.2.1 Deploy Twitter credentials

In chapter 2.2.1 of this guide you have created the following:

- Consumer Key
- Consumer Secret
- Access Token
- Access Token Secret

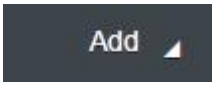
1. To carry out the activity, open your SAP HCI tenant WEB UI (e.g. https://<your SAP HCI tenant URL>/itspaces)

2. In the tenant menu choose *Monitor.*



3. Click on the *Security Material*

4. Click on Add.



5. Select Secure Parameter

6. Enter the following values:

Field Name	Entry Value
Name*	TWITTER_CONSUMER_KEY
Description	
Secure Parameter*	Example: AuRMrj8kjasdMMaLsfoEVasANNKs6
Repeat Secure Parameter*	Example: AuRMrj8kjasdMMaLsfoEVasANNKs6

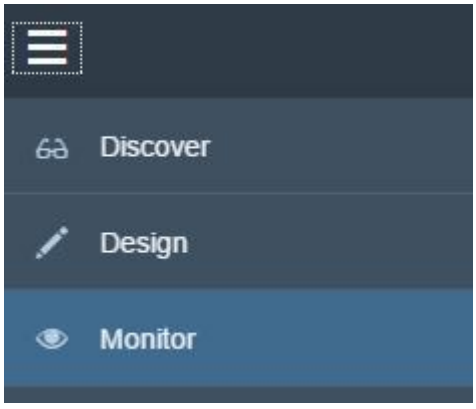
7. Click on Ok.

8. Repeat step 4-7 for TWITTER_CONSUMER_SECRET, TWITTER_ACCESS_TOKEN and TWITTER_ACCESS_TOKEN_SECRET.

3.2.2 Deploy OData User data with a Secure Parameter

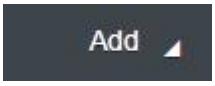
In chapter 2.3 of this guide, you created a role and assigned to your user in the SAP Business Suite Foundation system. This user credentials needs to be stored now in your HCI tenant as Secure Parameter.

1. To carry out the activity, open your SAP HCI tenant WEB UI (e.g. https://<your SAP HCI tenant URL>/itspaces)
2. In the tenant menu choose *Monitor.*



3. Click on the *Security Material*

4. Click on Add.



5. Select *User Credential*

6. Enter the following values:

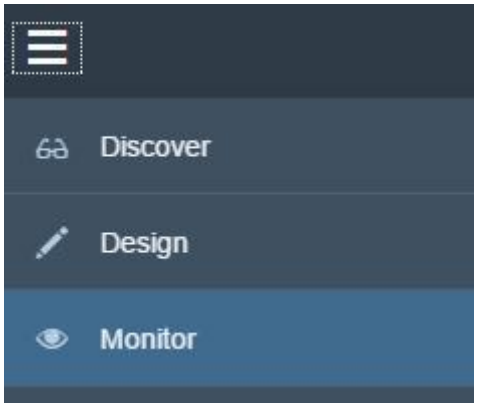
Field Name	Entry Value
Name*	Example, erp_user
Description	
User*	<User Alias Name of your technical user>
Password	<Password of your technical user>

7. Click on Ok.

3.2.3 Deploy HCI tenant User data with a Secure Parameter

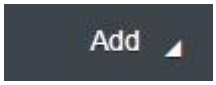
These user credential need to be deployed for usage in the *Twitter Integration IFlow*. The Username & password for this user are your credentials to logon to the HCI Web UI and your HCI tenant.

1. To carry out the activity, open your SAP HCI tenant WEB UI (e.g. https://<your SAP HCI tenant URL>/itspaces)
2. In the tenant menu choose *Monitor.*



3. Click on the *Security Material*

4. Click on Add.



5. Select *User Credential*

6. Enter the following values:

Field Name	Entry Value
Name*	TWITTER_HCI_SERVICE_USER
Description	Enter the description
User*	<your_user_name_for_the_HCI_tenant>
Password	<Your_SCN_Password>

7. Click on Ok.

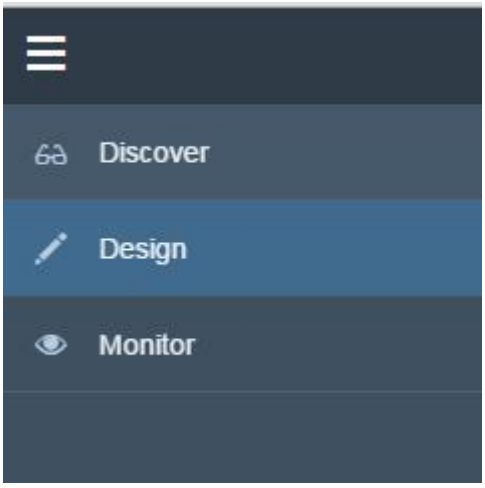
3.3 Deployment and configuration of the SAP Social Intelligence Data Harvesting from Social Media Channels Package

3.3.1 Deployment of the OData IFlow for Subjects

In this iFlow, you need to configure the Receiver parameters of your SAP Social Intelligence system.

1. In your preferred web browser navigate to the integration catalog hub page: https://cloudintegration.hana.ondemand.com/
2. Search for the *SAP Social Intelligence Data Harvesting from Social Media Channels* package.
3. To copy integration package in catalog to your customer workspace, mouse-over the integration package tile and choose the “Copy to Workspace” button.

4. In Design tab page, select the *SAP Social Intelligence Data Harvesting from Social Media Channels* integration package that contains *OData IFlow for Subjects*.



5. You see an overview of all the artifacts available in the selected integration package.

6. In the Actions column for the integration flow *OData IFlow for Subjects,* choose *Configure*.

7. Enter the relevant details on the Sender tab page

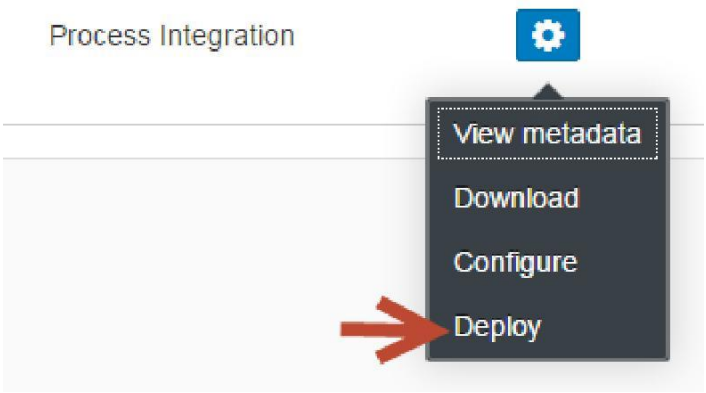
Field Name	Entry Value
Sender	Sender
Adapter Type	SOAP
Address	Example: </twitter_soap_endpoint_subject> You have to enter different addresses for different set ups.

8. Provide the relevant details on the Receiver tab page:

Field Name	Entry Value
Receiver	SMI
Adapter Type	OData
Address	Example: https://<hostname:port>/sap/opu/odata/sap/SOMI_DEFINE_SUBJECT (The above link to the OData Service is used to read the subjects/keywords configured in SAP Social Intelligence system)
Host	Example: <host name of SAP Social Intelligence system>
Port	Enter the port number
Client	Enter the client number
Authentication Type	Basic Authentication
Credential Name	Example, SMI_Credential (see this chapter)

9. Go back to the package content view.

10. In the Actions column for the *OData IFlow for Subjects,* choose *Deploy.*



3.3.2 Get the Link of the Deployed OData IFlow for Subjects

For proper configuration of the *Configuration IFlow for Subjects*, the correct link to the *OData IFlow for Subjects* is required. For this, you need to check this in the Monitoring tab of your HCI tenant Web UI.

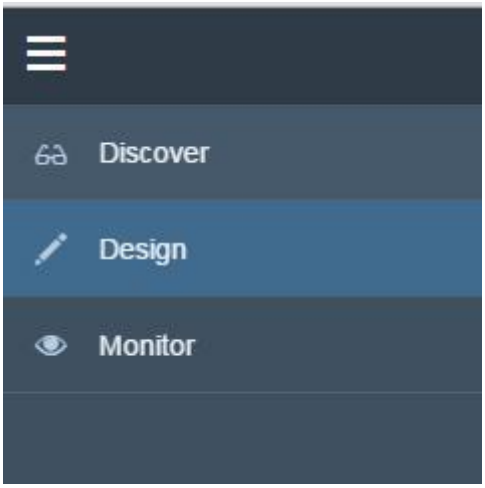
1. In the WEB UI of your HCI tenant go to the Monitor tab.
2. In the *Manage Integration Content* section select the tile with status *Started*.
3. Search for the *OData IFlow for Subjects* and click on the *Started (1)* link in column *Status*.
4. Note down the Endpoints link for the next step.

3.3.3 Deployment of the OData IFlow for Social Posts

In this iFlow, you need to configure the Receiver parameters of your SAP Social Intelligence system.

1. In your preferred web browser navigate to the integration catalog hub page: https://cloudintegration.hana.ondemand.com/
2. Search for the *SAP Social Intelligence Data Harvesting from Social Media Channels* package.
3. To copy integration package in catalog to your customer workspace, mouse-over the integration package tile and choose the “Copy to Workspace” button.

4. In Design tab page, select the *SAP Social Intelligence Data Harvesting from Social Media Channels* integration package that contains *OData IFlow for Social Posts*.



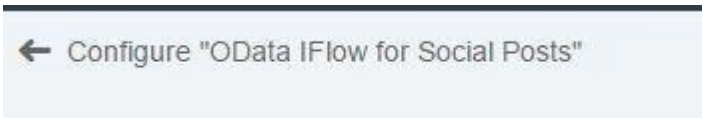
5. You see an overview of all the artifacts available in the selected integration package.
6. In the Actions column for the integration flow *OData IFlow for Social Posts,* choose *Configure*.
7. Enter the relevant details on the Sender tab page

Field Name	Entry Value
Sender	Sender
Adapter Type	SOAP
Address	Example: </twitter_soap_endpoint_socialpost> You have to enter different addresses for different set ups.

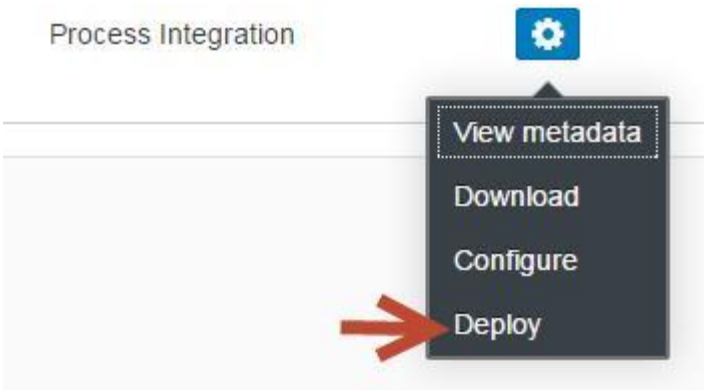
8. Provide the relevant details on the Receiver tab page:

Field Name	Entry Value
Receiver	SMI
Adapter Type	OData
Address	Example: https://<hostname:port>/sap/opu/odata/sap/ SOMI_SOCIAL_API_SRV (The above link to the OData Service is used to create the social post entries in SAP Social Intelligence tables)
Host	Example: <host name of SAP Social Intelligence system>
Port	Enter the port number
Client	Enter the client number
Authentication Type	Basic Authentication
Credential Name	Example, SMI_Credential (see this chapter)

9. Go back to the package content view.



10. In the Actions column for the *OData IFlow for Social Posts,* choose *Deploy.*



3.3.4 Get the Link of the Deployed OData IFlow for Social Posts

For proper configuration of the *Configuration IFlow for Social Posts*, the correct link to the *OData IFlow for Social Posts* is required. For this you need to check this in the Monitoring tab of your HCI tenant Web UI.

1. In the WEB UI of your HCI tenant go to the Monitor tab.
2. In the *Manage Integration Content* section select the tile with status *Started*.
3. Search for the *OData IFlow for Social Posts* and click on the *Started (1)* link in column *Status*.

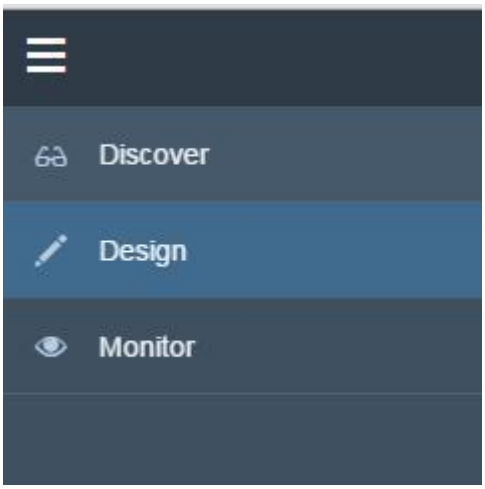
4. Note down the Endpoints link for the next step.

3.3.5 Deployment of the IFlow for Harvesting Twitter Data

In this iFlow, you harvest the twitter data into SAP Social Intelligence receiver system. In this iFlow, you will set up the Twitter credentials.

1. In your preferred web browser navigate to the integration catalog hub page: https://cloudintegration.hana.ondemand.com/
2. Search for the *SAP Social Intelligence Data Harvesting from Social Media Channels* package.
3. To copy integration package in catalog to your customer workspace, mouse-over the integration package tile and choose the “Copy to Workspace” button.

4. In Design tab page, select the *SAP Social Intelligence Data Harvesting from Social Media Channels* integration package that contains *IFlow* for *Harvesting Twitter Data*.



5. You see an overview of all the artifacts available in the selected integration package.

6. In the Actions column for the integration flow *IFlow* for *Harvesting Twitter Data*, choose *Configure*.

7. Provide the relevant details on the Receiver tab page:

Field Name	Entry Value
Receiver	Twitter
Adapter Type	Twitter
Consumer Key Alias	TWITTER_CONSUMER_KEY (See chapter 3.2.1)
Consumer Secret Alias	TWITTER_CONSUMER_SECRET (See chapter 3.2.1)
Access Token Alias	TWITTER_ACCESS_TOKEN (See chapter 3.2.1)
Access Token Secret Alias	TWITTER_ACCESS_TOKEN_SECRET (See chapter 3.2.1)

8. Change the Receiver field to *User* and provide the relevant details on the Receiver tab page:

Field Name	Entry Value
Receiver	User
Adapter Type	Mail
Address	< your mail server >
From	< your From: E-mail address >
To	< your E-mail address >

9. Change the Receiver field to *OData_IFlow_Subjects* and provide the relevant details on the Receiver tab page:

Field Name	Entry Value
Adapter Type	HTTP
Receiver	*OData_IFlow_Subjects*
Credential Name	<your_HCI_credentials> (see this chapter)

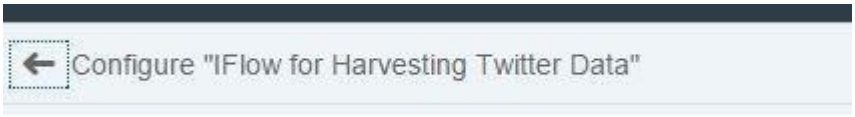
10. Change the Receiver field to *OData_IFlow_SoclPost* and provide the relevant details on the Receiver tab page:

Field Name	Entry Value
Adapter Type	HTTP
Receiver	*OData_IFlow_SoclPost*
Credential Name	<your_HCI_credentials> (see this chapter)

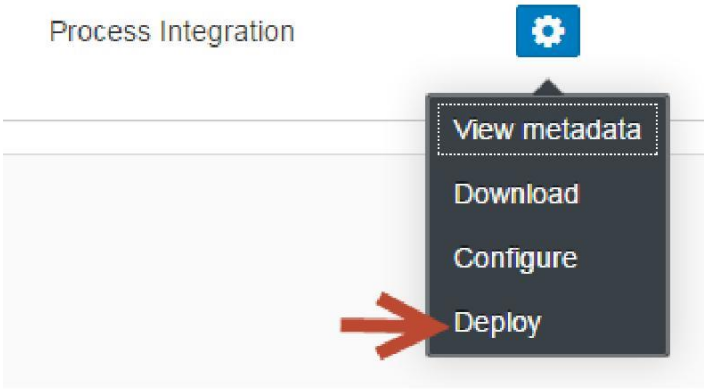
11. Switch to the Scheduler tab.
12. Set the frequency for the automatic iFlow run. (E.g. once or every hour)
13. Switch to the Parameters tab.
14. Here you can maintain your Twitter search keywords.

Field Name	Entry Value
Social Media Channel Code	Example: TW  You use this parameter to filter the subjects configured for this channel (twitter).
EndPoint_url_subjects	<OData iFlow for subjects URL from chapter 3.3.2>
EndPoint_url_socialposts	<OData iFlow for social posts URL from chapter 3.3.4>

15. Click on Save.
16. Go back to the package content view.



17. In the Actions column for the *IFlow* for *Harvesting Twitter Data,* choose Deploy.



The deployment fails for the following reasons:

- The *IFlow* for *Harvesting Twitter Data* is deployed for the first time.

  This is because the iFlow needs to initially create the data store SMI_SinceID for storing the SinceID of the keyword or subject. For this reason, you need to deploy this iFlow once again.

- A new subject or keyword is configured for the first time in the SAP Social Intelligence system.

  This is because the SinceID is not found in the data store SMI_SinceID for the newly created subject or keyword.

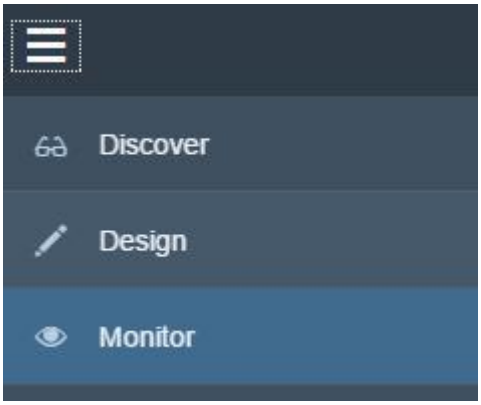
18. (Click on Deploy again)
19. Now the monitoring should show the successful start of the *IFlow* for *Harvesting Twitter Data*. The status should be “COMPLETED.”

3.4 Troubleshooting & Log

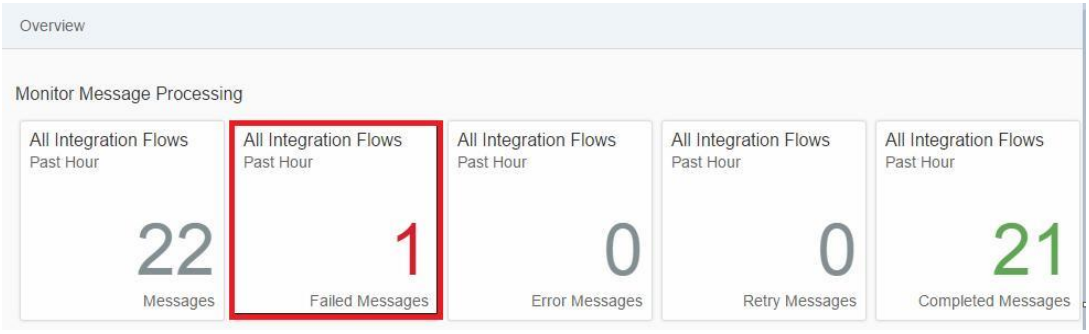
In the SAP HCI WEB UI you have the opportunity to analyze the deployed integration flows in the Monitoring section.

1. To carry out the activity, open your SAP HCI tenant WEB UI (e.g. https://<your SAP HCI tenant URL>/itspaces)

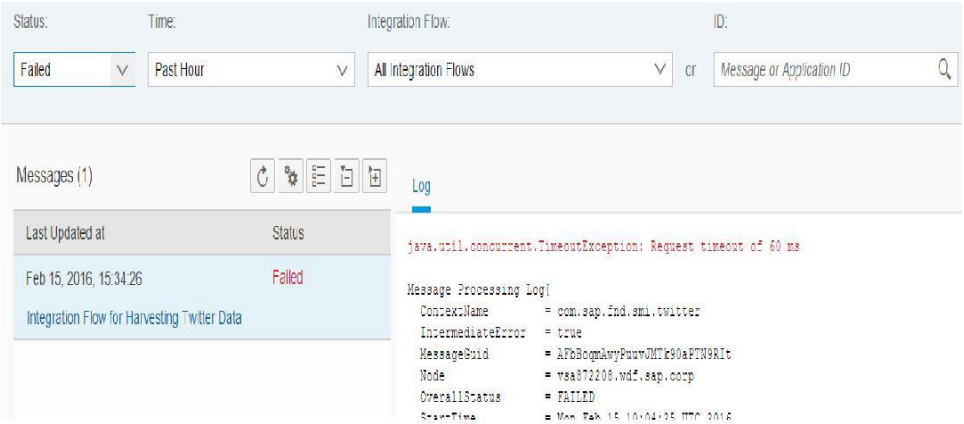
2. In the tenant menu choose *Monitor*



3. On the overview screen choose the tile with a message status you want to analyze

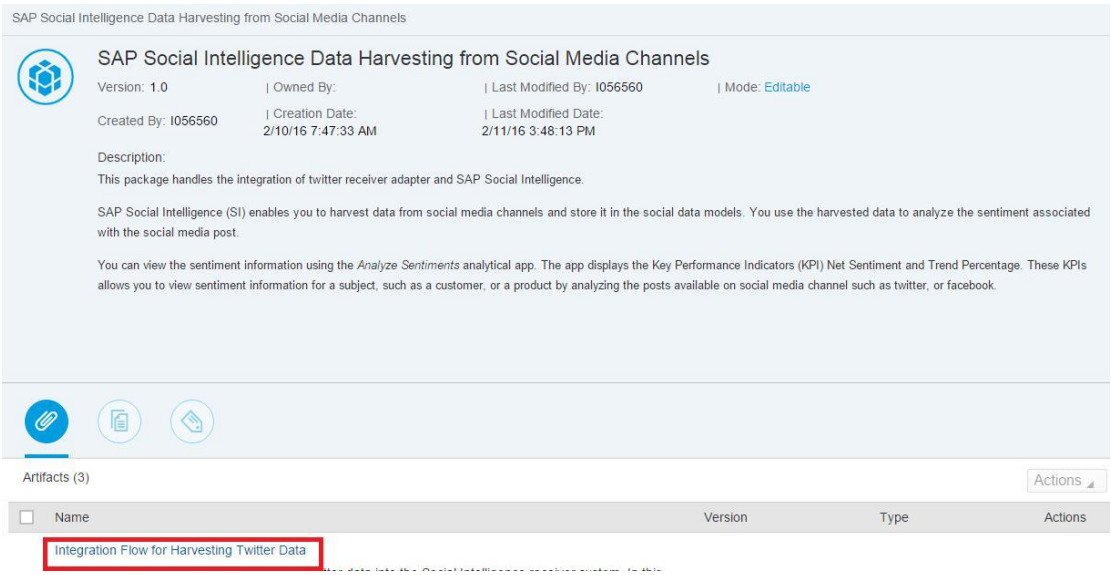


4. On the left side, select you integration flow you want to analyze.
5. In the Log tab you can switch between different log file. (Log, Audit, Tweets, Payload)

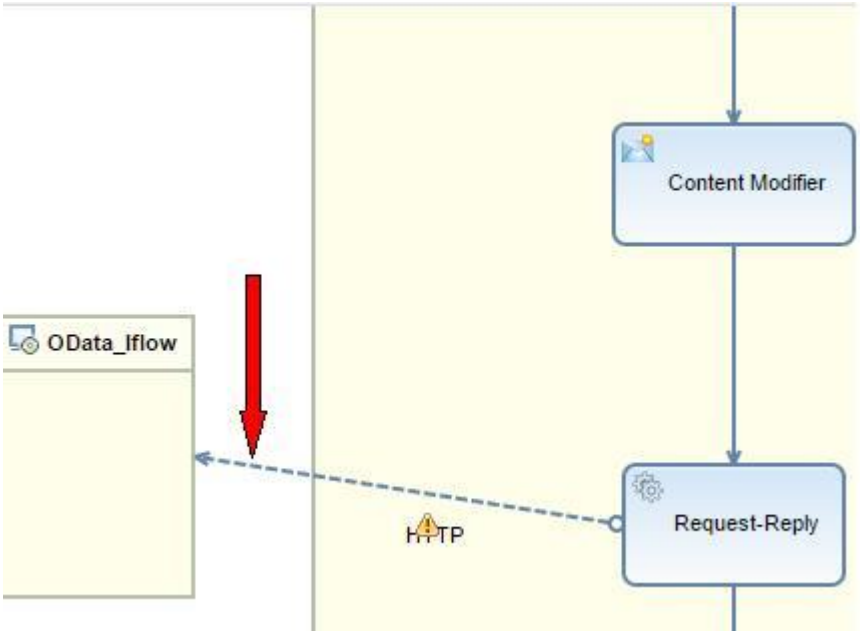


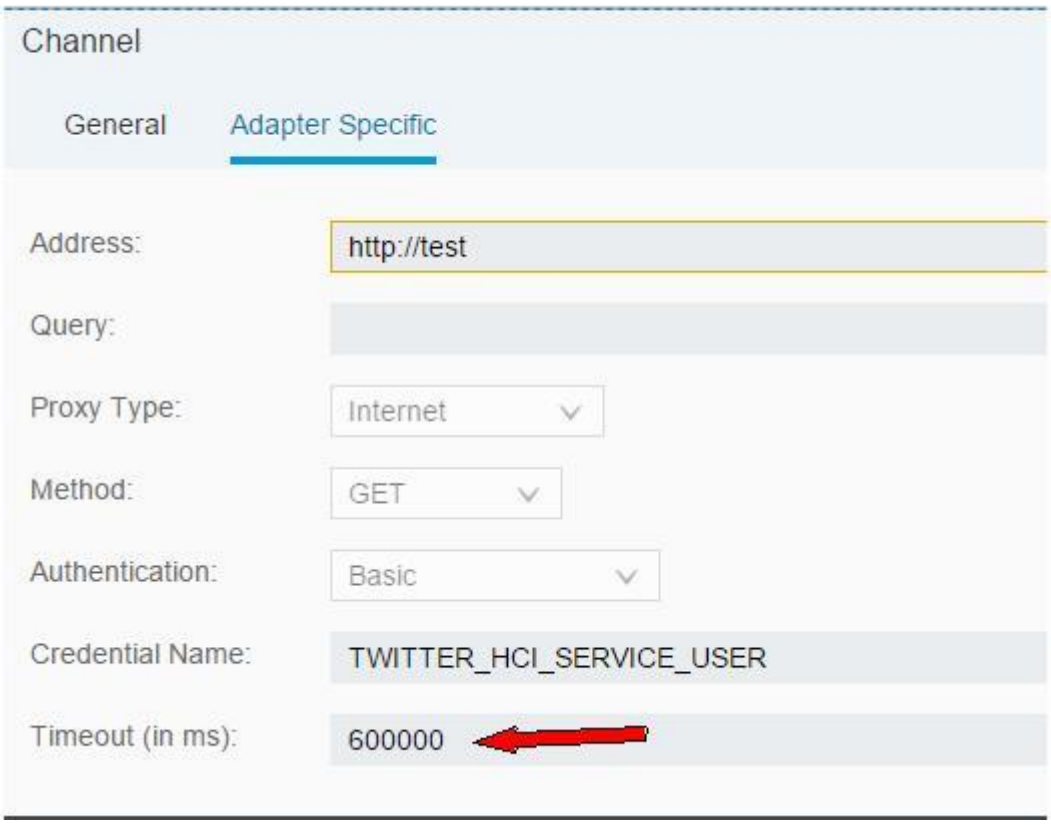
The Log tabs Audit, Tweets & Payload are available in the Integration Flow for Harvesting Twitter integration flow only.

6. In the showed example the error indicates that a Timeout occurred in the http adapter
7. This could occur for example because of a slow network connection. A possible solution could be to increase this timeout value.
8. For this open the *Integration flow for Harvesting Twitter Data integration flow* in the SAP HCI WEB UI Design section



9. Switch to Edit Mode.
10. In the Integration flow select the http Adapter and select then the Adapter Specific parameters.





11. Increase the Timeout value.
12. *Save* and *Deploy*.