Building block Configuration Guide
Supplier Integration between SAP Integrated Business Planning and SAP Business Networks
August 2023
English

CUSTOMER

Supplier Integration between SAP Integrated Business Planning and SAP Business Networks

Content

1 Prerequisites

This use case follows a very specific process in the supply chain collaboration scenario. It is between an SAP Integrated Business Planning (IBP) system and the SAP Business Network a.k.a. Ariba networks. This scenario depicts the main user as a planner on the supply side. The user is also known in the Business networks as a Supplier.

The following prerequisites are needed on the SAP IBP system.

- Have a planning area. Exposed the planning area to be consumed via APIs using the communication scenario SAP_COM_0720 as described in documentation:
  Integrating Data with External Systems

- A key figure to store the buyer requirement. For example, a key figure with the name BUYERFORECAST could contain the root attributes of buyer or customer ID, a location ID and a Product ID combined with a technical week or monthly period level. Such a key figure can be used to store forecast data for a specific buyer for a product and a shipment or delivery location.

- It could be that the supplier cannot commit to all the requirements for the buyer hence a BUYERCOMMIT can also be a key figure that can be used to store the response for that forecast requirement.

- The above key figures are not shipped out of the box. One must create them for this scenario. Do not forget to activate the planning area and expose the planning area for the above oData Service.

The following prerequisites are needed on the SAP Business Network.

- Before you can receive a forecast commit from a Buyer on the Business Network, one must have a working relationship build on the Business Network – also known as Buyer/Supplier enablement. Based on this, you would have a ANID (Ariba Network ID) and a Shared Secret.

- The Network settings for external system integration needs to be configured for Product Activity Messages on the Business Network

- Agree with the Buyer on the Product IDs, Location IDs as well as time schedules (Weekly, monthly, or quarterly delivery). Based on this time profile you can configure the Key figure root attribute details on the planning area.

The following prerequisites are needed on the SAP Cloud Integration.

- The integration flows which are build on the SAP Cloud Integration needs to be wither scheduled or called from outside. If they are called from outside, they need oAuth credentials. They can be created on the BTP – sub account using a Process Integration runtime service instance. For these integration flows, we use oAuth service keys which follow client credentials flow. The client ID and client Secret are set to be valid for 365 days.

- Since IBP as well as Business Networks are public cloud services, there is no need for a cloud connector setup.

- Create user credentials as a security material in Cloud Integration. It is a basic user setup. The credentials are coming from the communication system details for the oData service setup in SAP IBP. Here is where you can create or use a communication user in SAP IBP. These credentials are then stored under a credentials name. This name is then used in the integration flows.

2 Documentation

The overall process is described in the picture below.

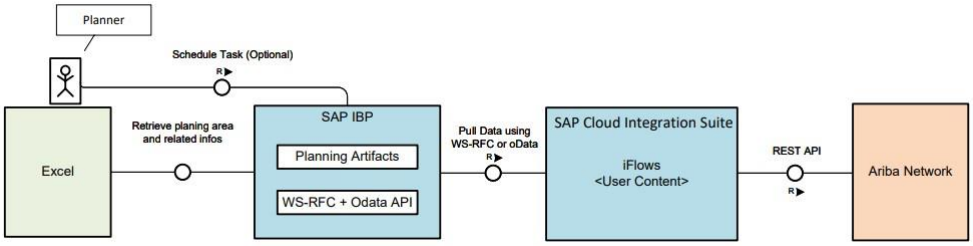

Figure 1. High level business process

Suppliers can download the forecast data from a Buyer over the SAP Business Networks using the REST APIs it provides. Once downloaded, these cXML messages can be transformed and imported into SAP Integrated Business Planning. We have the possibility to transform the messages into JSON payloads using the Get Buyer Forecast integration flow.

During this transformation, SAP IBP specific key figure attributes can be used to store the forecast data. The integration flow Process to IBP using oData is used to write data into IBP using oData services which are published in the SAP Business Accelerator Hub documentation.

Once this data is stored in IBP, the planned can view the key figure using a planning view created in Excel or in the planers workspace. This data can be modified or updated. It is recommended to use a separate key figure for this. The key figure – BUYERCOMMIT can be used to store what has been committed for the buyers forecast. This data is then sent back to the Buyer using the integration flow – Update Supplier Commit. This cXML message would then land on the Buyer's side of the Business Network as a supplier commit.

Get Buyer Forecast

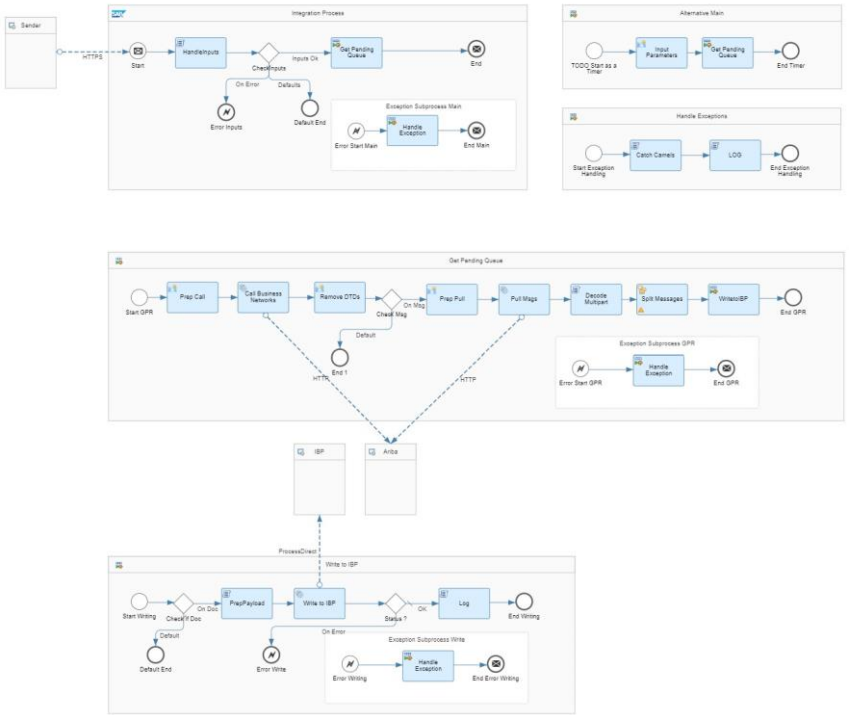

Figure 2. Getting buyer's forecast from SAP Business Networks into SAP IBP

This integration flow can be called from an external HTTP client. The end point for this can be https://< your cloud integration domain >/http/ibp/ariba/supplierpending. If you are using the http method of invoking this flow, you might use the client credential service keys generated in the BTP cockpit for the process integration runtime. The payload details for this are described in the next chapter. This integration flow calls the SAP Business Networks to get any pending requests which were not downloaded after a specific time stamp. A prereqiuisite integration flow is available which could create a time stamp as a temporary variable on the SPA Cloud Integration instance. This variable would create a time stamp and it is used later by the integration flow.

If there are documents after the last requested time stamp, they are then identified by the Business Networks with an internal ID. This ID is then used in the subsequent call to download the pending product activity messages. You can also specific how many documents you want to process during the download. The returned payload is a multi-part-mime based cXML document. Each document is then transformed into JSON payloads which are later used while writing this data into SAP IBP. The Process to IBP using oData integration flow is used for invoking the APIs on the IBP side.

This integration flow can be triggered using a HTTPs request. The request payload is a JSON. Details and sample of such JSON payload is provided in the later sections. Alternatively, this integration flow can be adapted to run on scheduled basis using a timer triggered flow. The Input parameters are configured via the content modifier given in the local sub process.

Update Supplier Commit

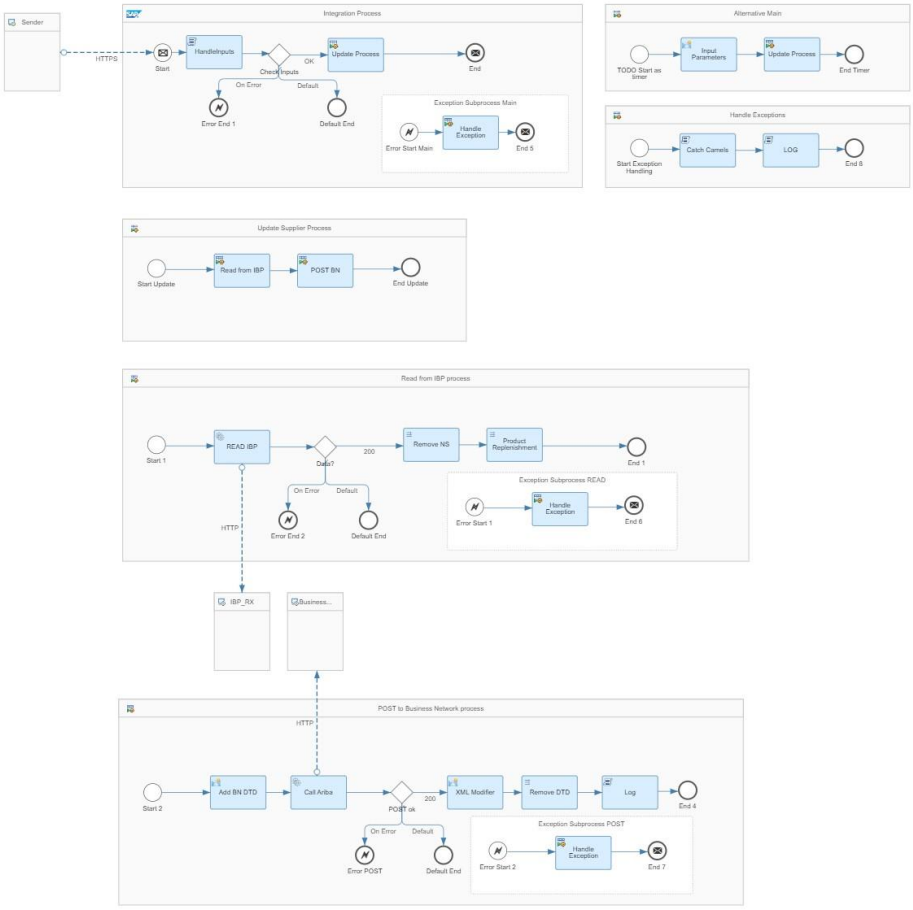

Figure 3. Updating Supplier's response as a commitment from SAP IBP into SAP Business Networks

This integration flow can be called from an external HTTP client. The end point for this can be https://< your cloud integration domain >/http/ibp/ariba/suppliercommit. If you are using the http method of invoking this flow, you might use the client credential service keys generated in the BTP cockpit for the process integration runtime. The payload details for this are described in the next chapter.

This integration flow calls the SAP Business Networks to POST, Forecast - Product Activity documents to the Business Networks. The data that is posts is a product replenishment message for a request that came from a Buyer. The supplier commits certain quantities to this request using this integration flow. Key figure data from SAP IBP is read using oData services and then transformed into Product replenishment messages. These are then sent to the Business Network using the standard cXML REST endpoints. During the process, DTDs and cXML structures are maintained by the integration flow. In case you like to modify the payload or add additional extrensics for the payload, one can modify the ProductActivity_cXML.xsl document which does the XSLT mapping.

This integration flow can be triggered using a HTTPs request. The request payload is a JSON. Details and sample of such JSON payload is provided in the later sections. Alternatively, this integration flow can be adapted to run on scheduled basis using a timer triggered flow. The Input parameters are configured via the content modifier given in the local sub process.

3 Configuration steps on Cloud Integration

The configuration for this package is integration flow specific. There are mainly two systems in use which act as senders and receivers interchangeably. One can adapt the integration flow the way they want, depending on which the following configuration parameters are important. They can be extended or reused as per requirement.

3.1 Calling the integration flow

There are two integration flows which are interesting in this use case. One is to Get documents from the SAP Business Networks. This can be a timer triggered integration flow or it can be called from outside using a HTTP request. Details for this HTTP request or configuration are summarized in the table below:

Key name	Description	Sample value
IBPDestination	URL of the IBP oData service based on your instance which was created during the communication arrangement setup	https://myxxxxx-api.scmibp.ondemand.com /sap/opu/odata/IBP/PLANNING_DATA_API_SRV
IBPCredentials	Technical user credentials created in the communication user setup	MYXXXXXX_API_USER
AribaSupplierANID	Supplier's Business Network ID	AN01XXXX5432X-T
AribaSharedSecret	Schared secret created during Supplier Enablement	SECRECT
AribaBuyerANID	Buyer's Business Network ID	AN01XXXX1245X-T
IBPPlanningArea	Planning area used in the SPA IBP	BNPLanningArea
IBPKeyFigureName	Name of the key figure used for storing buyer's forecast	BUYERFORECAST
MaxToDownload	Maximum number of messages to be downloaded	5
AribaMessageType	Constant to download the message (future use)	ProductActivityMessage
IBPCommit	True to commit, false not to commit. Can be used in the integration flow if there are large volumes of data and batch mode is used	true
IBPFieldsString	String of fields used in the oData service. Note:- adapt this on the payload building part as well.	PERIODID2_TSTAMP,PRDID,CUSTID, LOCID,CONSENSUSDEMANDQTY

Sample Payload for POST call would look like,

URL: https://< - your SAP Cloud Integration instance.+ domain...-->/http/ibp/ariba/supplierpending

```
{
    "IBPDestination": "https:// myxxxxx -api.scmibp.ondemand.com/sap/opu/odata/IBP/PLANNING_DATA_API_SRV",
"IBPCredentials": " MYXXXXXX_API_USER",
    "AribaTransactionURL": " https://service.ariba.com/service/transaction/cxml.asp",
    "AribaVendorDataURL": " https://service.ariba.com/VendData.aw/ad/cxml ",
    "AribaSupplierANID": "AN01XXXX5432X-T",
    "AribaSharedSecret": " SECRECT ",
    "AribaBuyerANID": "AN01XXXX1245X-T",
    "IBPFieldString": "PRDID,LOCID,CUSTID,BUYERFORECAST,PERIODID2_TSTAMP",
    "IBPPlanningArea": "BNPLanningArea",
    "IBPKeyFigureName": "BUYERFORECAST",
    "MaxToDownload": 5,
    "AribaMessageType": "ProductActivityMessage",
    "IBPCommit": "true"
}
```

When we download the Product activity messages from the Business Networks, we need to Calling the SAP IBP instance is via HTTP requests. The URL for the instance is passed via the configuration attribute or the http request key – IBPDestination. The credentials for

this endpoint are maintained as security material. The credentials are usually the technical user created while defining the communication system setup. Here is a screen shot of such configuration on the Request.

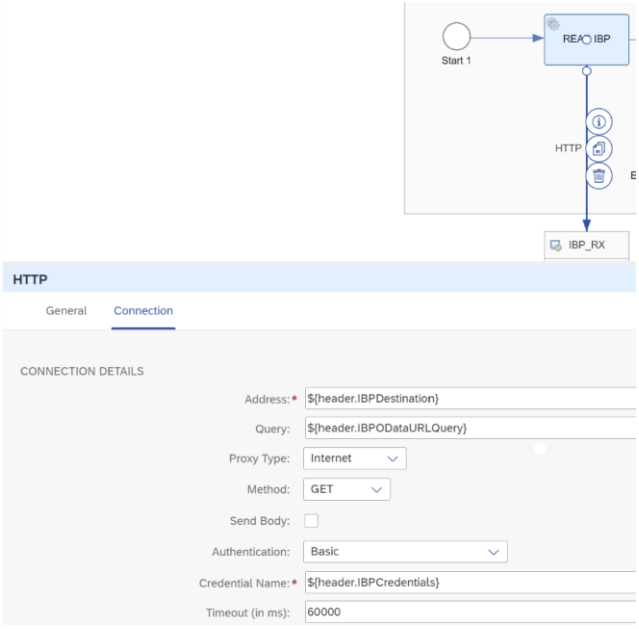

Figure 2. SAP IBP OData call details passed via parameters/key

3.2 Receivers

When we download the Product activity messages from the Business Networks, we need to import this data into the SAP IBP instance. For this a communication arrangement is needed. More info is provided in the next section. When we want to send a reply to this message, the payload is a product replenishment message. This payload is received by the Business Networks. The receive in that case is configured using the HTTP adapter interface. The document contains the payloads needed for authentication. However, the https POST URL Address is a standard interface from the SAP Business Networks as defined by the cXML guidebook - https://service.ariba.com/service/transaction/cxml.asp. It is also possible to configure via the AribaTransactionURL parameter/key

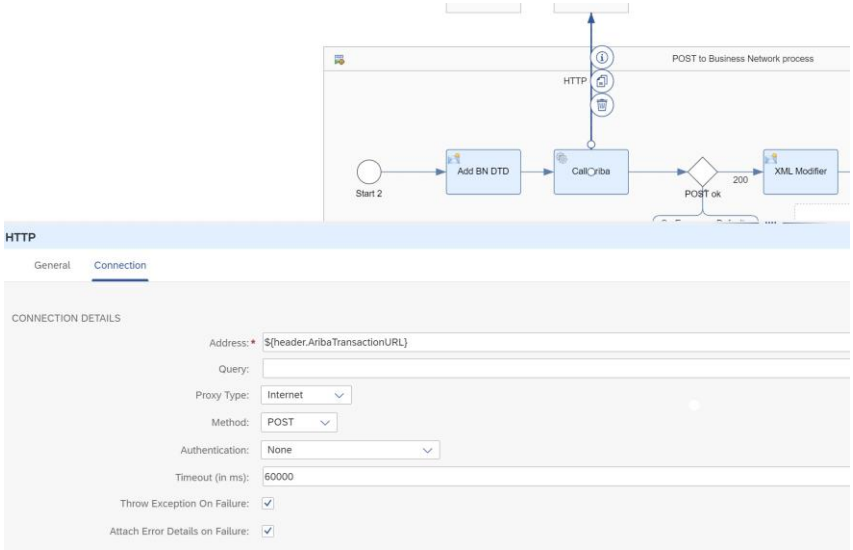

Figure 2. Screen shot of the HTTP request setup to get pending requests.

3.3 Communication Arrangement on SAP IBP

OData services are used by the integration flows to read and write data in SAP IBP. The key figure planning oData service is used for this purpose. The APIs are described on the SAP Business Accelerator Hub. For consuming this oData service from outside the SAP IBP system, we need to define the communication arrangement. For this a communication system and a user is needed. Detailed steps for this are explained in the SAP Help Portal. A Basic authentication setup is used for this integration flow. You can store the user credentials in the security material of SAP Cloud Integration using a credential name. this is then referred in the integration flows for later consumption.