Meet the Expert: SAP IBP External Integration - Capabilities and Roadmap

SAP Product Management
April, 2020
Agenda

SAP IBP External Integration: Overview

What’s New

Short-term and Mid-term Roadmap

Sneak-Peak: Planned independent requirement integration from SAP IBP to S/4 or SAP ERP using CPI-DS and RFC

Q&A
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SAP IBP External Integration Overview
SAP IBP Architecture Overview
System Landscape

IBP Applications
- Applications: SC Control Tower, Collaboration, Demand Driven, Demand Response & Supply
- Configuration

HANA Database
- Calculations and Algorithms
- Data Model

Web User Interface
- IBP Fiori

MS Excel
- IBP Add-In

REST APIs
- IBP Add
- In

OData Service

MS Excel
- IBP Add-In

Frontend
- Cloud NW

Backend
- SAP CPI-DS

SAP Cloud Platform
- SAP CoPilot
- SAP CP-IAS
- SAP JAM
- SAP Ariba

SAP Customer Cloud Systems

S/4 Hana or ECC

Other
(BW, ...)

SAP SDI DP Agent

SAP CPI-DS Agent

IBP Integration Add-On

SAP SDI

SAP IPS

SAP IAG

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Integration of SAP ECC, S/4HANA with IBP Using Add-On

SAP Integrated Business Planning

Inbound Staging Tables

Time Series Based Planning Area

Order Based Planning Area

SDI

Open API

SAP Cloud Platform Integration for data services

SAP Data Provisioning Agent

SAP Data Services Agent

IBP Integration Add-On

Extractors

Function Modules

Function Modules

Staging Tables

Application

SAP S/4HANA on premise, SAP ECC 6.0 as off EHP 4

Planned for May 2020

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Time Series Based Integration using CPI-DS
Time Series Based Integration

Integrating Data to IBP Time-Series-Based Planning Areas

• The following data can be transferred to IBP time-series-based planning areas using CPI-DS:
  • Master data, such as location sources or customer sources
  • Transactional data (key figures)

• Supply Chain Integration Add-On for SAP Integrated Business Planning provides:
  • Extractors for master data types and key figures used in SAP Sample Planning Areas
    (e.g. Unified Planning Area, Demand Driven Replenishment Planning Area)
  • These extractors are called by CPI-DS to select required data and transfer them to IBP

→ Easier and faster way to setup IBP Integration with S/4HANA On Premise / ECC

SAP Cloud Platform Integration Guide for SAP Integrated Business Planning 2002 and SAP Cloud Platform Integration for Data Services:
Time Series Based Integration

Data Flow

SAP CPI-DS:
SAP Cloud Platform Integration for data services, formerly known as: SAP HANA Cloud Platform, integration service for data services (HCI-DS)

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# Pre-Packaged Content for Periodic Data Transfer of Master Data from Add-On for S/4 HANA On Premise and ERP to Unified Planning Area

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<thead>
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<th>Template</th>
<th>Data Flow</th>
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# Pre-Packaged Content for Periodic Data Transfer of Key Figures from Add-On for S/4 HANA On Premise and ERP to Unified Planning Area

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Pre-Packaged Content for Periodic Data Transfer of **Master Data** from Add-On for ERP to IBP Demand Driven Replenishment Planning Area

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Pre-Packaged Content for Periodic Data Transfer of Key Figures from Add-On for ERP to IBP Demand Driven Replenishment Planning Area

<table>
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<th>Object</th>
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## Pre-Packaged Content for Periodic Data Transfer of Key Figures from IBP Unified Planning Area to Add-On for S/4 HANA On Premise and ERP

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Planned for May 2020
Pre-Packaged Content for Periodic Data Transfer of **Key Figures** from IBP Demand Driven Replenishment Planning Area to Add-On for ERP

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Planned for May 2020
Order Based Integration using SDI
Order-Based Planning: Multi Source Integration

SAP HANA Smart Data Integration (SDI):

- The SAP ERP, supply chain integration add-on for SAP Integrated Business Planning uses SAP HANA Smart Data Integration (SDI) to transfer data from SAP ERP to SAP Integrated Business Planning (IBP)

- Integration:
  - < IBP1905: Single Integration Source - Multiple Integration Sources not supported
  - IBP1905: Multiple Integration Sources into individual planning areas
  - IBP1911: Multiple Integration Sources for one common planning area
1. Single Source Integration (available)
2. Multiple Source Integration into Individual Planning Areas
Available with IBP1905

[Diagram showing integration of SAP S/4HANA, SAP ERP, Other Systems (SAP BW), and Files into SDI Agent and IBP with Order-based Planning Areas 1, 2, and 3. Cloud and On Premise are indicated as well.]
3a. Multiple Source Integration into a common Planning Area
Available with 1911 - Master & Transactional Data from the same source system

* Data is harmonized before the integration to IBP
3b. Multiple Source Integration into a common Planning Area
Available with 1911 - Master Data from Central Source & Transactional Data from other Source Systems

* Data is harmonized before the integration to IBP

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This is the current state of planning and may be changed by SAP at any time.
What’s New
Agenda

- **New Integration Scenarios**
  - IBP Integration with SAP Analytics Cloud (SAC)
  - IBP Integration with SAP Cloud Platform Identity Provisioning Service (IPS)
  - IBP Integration with SAP Cloud Identity Access Governance (IAG)

- **Time Series Based Integration using CPI-DS**

- **Order Based Integration using SDI**

- **Real Time Integration**

- **Qualtrics Integration**
IBP Integration with SAP Analytics Cloud (SAC)

SAC Financial Planning and Digital Boardroom consumes IBP data

**IBP Applications**

- **MS Excel IBP Add-In**
- **Web User Interface IBP Fiori**
- **IBP Add-In**
- **IBP Fiori**
- **REST APIs**
- **OData Service**
- **Cloud NW**
- **Data Model**
- **Calculations and Algorithms**
- **IAM**
- **Job Scheduling**
- **Data Integration for SDI**
- **Data Integration for CPI-DS**

**HANA Database**

**SAP Cloud Analytics**

- **Model and Story for SAC Analytics**
- **Digital Boardroom**
- **SAC Data Integration**
- **Planning**

**SAC calls IBP OData Service to READ**

IBP Time Series Values (Key Figure) and IBP Master Data Attribute Values

**SAC calls IBP OData Service to WRITE**

IBP Time Series Values (Key Figure)
SAP Analytics Cloud (SAC) – IBP Content available with IBP1908

Standard Digital Boardroom content for IBP in SAC
(details see next slide)

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SAP Analytics Cloud (SAC) – IBP Content available with IBP1908

Pre-delivered model to integrated with IBP Data

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Digital Boardroom Views and Stories

Pre-delivered Content in SAC Business Content Library

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Pre-delivered Sample Data

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IBP Integration with SAP Cloud Platform Identity Provisioning Service (IPS)

**IBP1911:** Integrating SAP Cloud Platform Identity Provisioning Service with IBP

- The communication scenario `SAP_COM_0193` allows you to connect to SAP Cloud Platform Identity Provisioning Service with SAP Integrated Business Planning.

- Using this communication scenario you can provision business users and assign business roles to business users from an identity management system, for example, SAP Cloud Platform Identity Authentication Service in SAP Integrated Business Planning.
IBP Integration with SAP Cloud Identity Access Governance (IAG)

**IBP2002**: IBP Integration with SAP Cloud Identity Access Governance (IAG)

- **Support comprehensive identity management and access governance** (IAM) to ensure secure access, minimize access risk, and mitigate potential risks for financial loss

- **Role design service** is a cloud solution for creating, optimizing, and maintaining business roles for on-premise and cloud source systems

- **Access request service** is a cloud service for creating self-service requests to applications for on-premise and cloud source applications and systems

- **Access certification service** is a cloud solution for reviewing, and certifying access for on-premise and cloud source applications
Short-term and Mid-term Roadmap

Planned for May 2020
SAP Integrated Business Planning – integration
Product road map overview – Key innovations

**V2005 – Recent innovations**
- **Time-series-based integration**
  - SAP Integrated Business Planning add-on for SAP ERP and SAP S/4HANA as data source
  - Integration of planned independent requirements from SAP Integrated Business Planning to SAP S/4HANA

**Integration scenario**
- Enhancement to OData service to read master data values: Extract only data which was created or changed relative to a given date

**Order-based integration**
- Component validity

**SAP API Business Hub**
- External interfaces of IBP published to SAP API Business Hub incl. key figure extraction, identity management, monitoring integration, planning calendar

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**V2008 – Planned Q3/2020**
- **Time-series-based integration**
  - New customer managed integration scenario for direct integration to CPI-DS Agent

**Order-based integration**
- Transportation resource
- Production planning integration: Integration of operational supply planning in SAP IBP with detailed scheduling in SAP S/4HANA 2009 embedded PP/DS
- Fair share for optimization

**Financial integration**
- Financial integration content with SAP Analytics Cloud
  - Revenue planning in SAP Analytics Cloud with SAP Integrated Business Planning demand and supply plans

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**V2011 – Planned Q4/2020**
- **Time-series-based integration**
  - SAP Integrated Business Planning add-on for SAP ERP and SAP S/4HANA as data source
  - Product allocations integration from IBP to SAP S/4HANA

**Integration scenario**
- OData service to write key figure values
- OData service to write SAP Integrated Business Planning calendar

**Order-based integration**
- Subcontracting (basic scenario)

**Financial integration**
- Integrate margin, annual operating plan, and costs from SAP Analytics Cloud to SAP IBP
- Integration of inventory planning data to SAP Analytics Cloud

---

**V2012 – Planned Q1/2021**
- **Time-series-based integration**
  - SAP Integrated Business Planning add-on for SAP ERP and SAP S/4HANA as data source
  - Further extractors

**Integration scenario**
- OData service to write master data values
- Enhancement to OData service to write key figure values into user defined scenarios

**Order-based integration**
- Goods issue time
- Integration for Order-based DDMRP
- Enhancements to production planning integration with S/4HANA embedded PP/DS

---

*All references to SAP S/4HANA in this slide are for on-premise version*
SAP Integrated Business Planning – integration
Direction update¹

Time-series-based integration with SAP S/4HANA and SAP ERP
- Enhancements to the add-on concept approach to enrich integration content with SAP Cloud Platform Integration for data services

Order-based integration with SAP S/4HANA and SAP ERP
- Real-time integration

Integration with SAP C/4HANA – SAP Sales Cloud and SAP Marketing Cloud solutions
- Outbound integration of demand plans
- Inbound integration of opportunities into sales forecast quantity

Natural language processing
- Conversational AI integration within SAP Integrated Business Planning

Integration with SAP Data Intelligence on SAP Cloud Platform
- Extending SAP IBP ML capabilities for data scientists by integrating with SAP Data Intelligence
OBP Integration

Today (SDI) – Future (Real-Time)
Order-Based Integration – Data Flow

Order Based Integration:
- **Integration technology:**
  - SDI (SAP HANA Smart Data Integration)
  - File-Based integration (IBP Open-API)
  - Tables Integration

- **Integration flow:**
  - Periodic data integration
  - Pull-Logic for master and transactional data from source system (ECC, S/4HANA On Premise) via scheduled job
  - Full data load

SDI: SAP HANA Smart Data Integration
Real-Time Integration

Real-Time Integration:

• **Definition:**
  
  *Almost real time* integration from source to target system via *asynchronous* functions

• **Goals:**
  Integration with ECC, S/4HANA
  
  • Using the *same integration technology* (qRFC)
  
  • Supporting *transactional consistent* and *real time integration* (for master and transaction data)

  Transactional consistent data integration is required on business transaction level of the source system. Example: When a purchase requisition is converted into a purchase order in one business transaction in S/4HANA, then both orders need to be send, integrated and received in IBP as one atomic action to avoid missing or doubled quantities for subsequent planning.

  of captured data which is relevant for IBP planning processes

  • Supporting *Initial Load & Delta load* of data

  • Bidirectional integration (*IBP → ECC, S/4HANA* and *ECC, S/4HANA → IBP*)
Real-Time Integration*

*Below figure shows an overview of the data flow from ECC / S/4HANA to IBP. Plan is to provide bidirectional integration, including back-integration from IBP to ECC / S/4HANA

Main differences to existing order based integration:
- Push from source system to target system, instead of pulling the data
- Initial Load + Delta Load
- Real-Time

Data Capturing for each planning relevant object - create, update, delete -
- Transactional Data: PO, Purchase Req, ...
- Master Data: Product, Location, ...

Continuous Delta

SAP Cloud Connector

Data transformation and simplification for each planning relevant object

HTTPS

SAP IBP

ECC, S/4HANA

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This is the current state of planning and may be changed by SAP at any time.
Real-Time Integration*

*Below figure shows an overview of the data flow from ECC / S/4HANA to IBP. Plan is to provide bidirectional integration, including back-integration from IBP to ECC / S/4HANA

Main differences to existing order based integration:
- Push from source system to target system, instead of pulling the data
- Initial Load + Delta Load
- Real-Time

This is the current state of planning and may be changed by SAP at any time.
Integration with Qualtrics

Combine X+O Data in IBP
Integration with Qualtrics: Combine X+O Data in IBP

Example Use Case: Combine X+O Data in IBP to improve Demand Sensing

1. Create Qualtrics Survey to enter customer feedback (to capture product satisfaction score (X-Data))
2. Expose the Qualtrics Survey in Web Store (SAP Customer Experience, previously known as SAP Hybris)
3. Capture product experience data using Qualtrics XM product Experience tool
   Interpret the survey responses into a score weigh the survey responses for each question from a scale of 0 to 10 depending on how meaningful they are towards perception, value, trust, usage and ultimately leading to product satisfaction
4. Break this score on weekly basis (SAP IBP has the target key figure defined with weekly planning level)
5. Transfer data from Qualtrics to IBP via CPI-DS (target: weekly defined key figure)
6. Demand Sensing Planning Run using X+O Data
Integration with Qualtrics: Combine X+O Data in IBP – Overview

Customer’s own X Data from store front

- Lab Prototype -

Qualtrics

Site Intercept

Pull in feedback for a new product e.g. Reviews / Sentiments

Response Scoring

Structure this in meaningful sentiments, e.g. good, wanted, bad

CPI-DS

CSV

SAP IBP

Integration

X+O

IBP Data Integration maps X Data (e.g. as new key figure)

SAP IBP Demand Sensing

Compare with X Data with Demand Sensing key figures

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Integration with Qualtrics: Create Qualtrics Survey

Create Qualtrics Survey to capture product satisfaction score (X-Data)
Web Intercept via Anonymous Link

There are several alternatives like email survey, etc. This example just illustrates how to embed the survey in a simple way.

Integration with Qualtrics: Expose survey in Web-Store

Product Satisfaction Survey

Please answer the following questions in regards to the following product.

Newtools Power tool PSR-960

Description: Compact and powerful Cordless Drill

How long have you used this product?

- Less than a week
- A week to a month
- A month to half a year
- Half a year to a year
- Over a year

How often do you use this product?

- Daily
- Weekly
- Monthly
- Planetary
- Never

Qualtrics Product Satisfaction Survey with product name from the webshop
Integration with Qualtrics: Data Analysis in Qualtrics

Survey question which has a score for its response

Customer data from survey
Integration with Qualtrics: Data Analysis in Qualtrics

Data Analytics in Qualtrics

Score on weekly basis
Integration with Qualtrics: Data Integration using CPI-DS

Data flow in SAP CPI-DS which contains the different stages of data processing from Qualtrics into SAP-IBP
Product Satisfaction score modeled as new Key Figure in IBP
Integration with Qualtrics: **Product Satisfaction Score in IBP**

Dashboards in IBP: Show *Product Satisfaction Score* from Qualtrics
(like other key figures)
Integration with Qualtrics: Demand Sensing & Product Satisfaction Score

IBP Forecast Model for Demand Sensing:
Demand Sensing using Product Satisfaction Score KF as Downstream Signal
Integration with Qualtrics: Demand Sensing & Product Satisfaction Score

Effects of Product Satisfaction Score in Demand Sensing

Results without the Extra Signal:
w/o the extra signal, but just the requested quantity and demand planning quantity, a declining sensed demand is calculated.

Results with the Extra Signal:
Demand Sensing automatically learns the correlation between Product Satisfaction Score and actual demand in the market. It responds to this and suggests to increase the demand forecast further for the near future.
**Integration with Qualtrics: Demand Sensing & Product Satisfaction Score**

**Table of results without Extra Signal:**

<table>
<thead>
<tr>
<th></th>
<th>Week 1 2020</th>
<th>Week 2 2020</th>
<th>Week 3 2020</th>
<th>Week 4 2020</th>
<th>Week 5 2020</th>
<th>Week 6 2020</th>
<th>Week 7 2020</th>
<th>Week 8 2020</th>
<th>Week 9 2020</th>
<th>Week 10 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested Qty</td>
<td>3343</td>
<td>3654</td>
<td>3442</td>
<td>3681</td>
<td>2082</td>
<td>979</td>
<td>1024</td>
<td>163</td>
<td></td>
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<tr>
<td>Demand Planning Qty</td>
<td>3296</td>
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<td>1332</td>
<td>3390</td>
<td>1301</td>
<td>1175</td>
<td>1156</td>
<td>827</td>
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<td>1010</td>
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<tr>
<td>Product Satisfaction Score</td>
<td>20.25</td>
<td>39.97</td>
<td>34.29</td>
<td>44</td>
<td>2284</td>
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<td>1923</td>
<td>1582</td>
<td>1588</td>
<td>1365</td>
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<tr>
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<td>1923</td>
<td>2461</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PIR back integration from SAP IBP to S/4 or SAP ERP using CPI-DS and RFC
Integration of SAP ECC, S/4HANA with IBP Using Add-On

SAP Integrated Business Planning

Time Series Based Planning Area

SAP Cloud Platform Integration for data services

Consensus Demand Quantity

SAP Data Services Agent

SAP S/4HANA on premise, SAP ECC 6.0 as off EHP 4

IBP Integration Add-On

Monitoring and processing transaction
/IBP/ETS_PIR_MON

Function Module
/IBP/ETS_PIR_IN_RFC

Staging Table
/IBP/ETS_PIR

Function Module
/IBP/ETS_PIR_PROCESS

Application

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Documentation for direct RFC calls
(planned for May 2020)

SAP Cloud Platform Integration Guide

Templates for SAP Integrated Business Planning
  Key Figure Templates for Unified Planning Area
    IBP_to_ERP_PIR_via_RFC
  Key Figure Templates for Application-Specific Planning Areas
    IBP_DDR_to_ERP_AddOn_via_RFC
    Special use case, but can be used as template for own tasks with own functions

Extensibility Information
  RFC-Enabled Function Modules
    Good entry point for understanding concepts and adaption options
Demo PIR back integration
Questions & Answers
Thank you.

Contact information:
Reinhard Sudmeier, SAP IBP Product Management
reinhard.sudmeier@sap.com
Appendix
Recent Webinars & Blogs

Meet the Expert SAP IBP WEBINAR: CPI-DS Customer Use Cases
https://dam.sap.com/a/3aCtujF

Meet the Expert: SAP IBP Webinar: External Integration Capabilities and Roadmap
https://dam.sap.com/a/2Hx9hxq

SAP IBP Data Extraction via CPI-DS – Curl ERROR 52

SAP IBP Data Extraction via CPI-DS: How to best filter data by time?

SAP IBP Data Extraction via CPI-DS: How to extract key figures on different planning levels?
https://blogs.sap.com/2019/09/09/sap-ibp-data-extraction-via-cpi-ds-how-to-extract-key-figures-on-different-planning-levels/

SAP IBP Data Extraction via CPI-DS: Are your Filters considered?

Troubleshooting Data Integration Tasks in SAP IBP

Use SAP S/4HANA core data services in CPI-DS
Overview of Webinar Series

SAP IBP Integration using CPI-DS (1/4): SAP ERP - April 2\textsuperscript{nd}

SAP IBP Integration using CPI-DS (2/4): SAP BW Integration - April 8\textsuperscript{th}

SAP IBP Integration using CPI-DS (3/4): Back integration from SAP IBP to SAP ERP using RFC Enabled Function Modules - April 14\textsuperscript{th}

SAP IBP Integration using CPI-DS (4/4): Microsoft Azure Data Lake & Microsoft Azure Cloud Storage Integration - April 29\textsuperscript{th}
Use cases for using RFC-enabled function modules in IBP integration

IBP to a business suite system, e.g. S/4HANA or SAP ERP
▪ Send data in batches is supported
▪ No background processing possible
▪ Technical target needs to be a file

Modify or extend data from one system in another and send to IBP
▪ First system: extractors, custom ABAP transform, table access or RFC (not recommended, see below)
▪ Second system: only RFC can be used, as the others don’t support freely defined input

Business suite system to IBP
▪ Possible, but not recommended for big data volumes
▪ Very limited support for batch processing on the source side
▪ In many cases extractors, custom ABAP transforms or table access are a better choice, as they fully support batch processing on the source side
Prerequisites for using RFC-enabled function modules

New version of the Data Services Agent

Data store of type SAP Business Suite Application
- Often already available

Either of
- IBP add-on for S/4HANA or SAP ERP (for PIR integration, support package available in May 2020, planned)
- Own RFC-enabled function module

Data store of type SAP Integrated Business Planning
Differences direct RFC call versus web service based on RFC

- No web service and no binding definition in transaction SOAMANAGER needed
- SAP Business Suite Datastore can be reused
- Technically same interface as used for metadata, extractor, custom ABAP transform and table read
- No extra SSL certificates needed
- Cannot be the target of a dataflow
  - If the web service is an intermediate step of a data flow you can easily exchange the transform
  - If it is the target you need to define a new dataflow with a different target and structure
- Faster than web services
  - especially when using TABLES like <row structure> is used
  - Using IMPORTING, CHANGING or EXPORTING type <table type> is still faster than web service
Disclaimer

The delivery of function module /IBP/ETS_PIR_IN_RFC in the May 2020 support package of the add-on and of template IBP_to_ERP_PIR_via_RFC for SAP Cloud Platform Integration for data services are subject to change. This is not a binding documentation for future deliveries.
Load the function module definition to the S/4 or ERP datastore

- Create or navigate to the datastore of type SAP Business Suite Application
- Do a connection test
- The default configuration is used for loading the function metadata, change and save it if needed
- ABAP Execution option Execute preloaded is sufficient and needs less authorizations
- Click on Tab Tables
- Click button Import Object by Name
- On the popup
  - Choose type Function
  - Fill the function module name
  - Click OK
The definition of the function module interface is loaded

Additionally for every table like parameter the row structure is also loaded

CPI-DS treats all table like parameters as changing parameters, even if they are defined as IMPORTING or EXPORTING

If data are not loaded correctly it’s often a connection or authorization issue
Create a file format group for the target file

- Navigate to DATASTORES
- Click New Datastore
- Fill the fields Name and Description
- Choose Type File Format Group
- Choose an agent
- Specify a root directory
  - The use access to that directory needs to be allowed in the agent configuration
  - Is agent operating system dependent
- Click Save
Create a file format for the target file

- Navigate to File Formats (if not done yet)
- Click Create File Format
  => Create from Scratch
- On the popup
  - Fill field Name with DUMMY_OUTPUT_FILE
  - Fill field Description, e.g. with Dummy output file for RFC and web service calls
  - Click OK
- On the tab Columns click Add Column
- On the second popup
  - Fill field Name with DUMMY
  - Choose Data Type varchar
  - Specify length 1
  - Add Description Dummy Field
  - Click Submit
### Create the task for planned independent requirements Integration

- Create a project or mark an existing one
- Click Create Task
- Fill the Name field
- Check Use Template
- Scroll down to entry `IBP_to_ERP_PIR_via_RFC` and mark it
- Click Next
- Mark the source IBP datastore
- Scroll down if needed and click Next
- Choose the target file share
- Click Save => Save and Define Dataflow

#### MY_PIR_PROJECT: Create Task

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Source</th>
<th>Target</th>
<th>Changed On...</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBP_MD_SalesOrder_Delta__</td>
<td>IBP_MD_Sales...</td>
<td>SAP Application</td>
<td>HANA_CLOUD...</td>
<td>2016.12.02.14...</td>
</tr>
<tr>
<td>IBP_MD_SalesOrder_Initial...</td>
<td>IBP_MD_Sales...</td>
<td>SAP Application</td>
<td>HANA_CLOUD...</td>
<td>2018.12.02.14...</td>
</tr>
<tr>
<td>IBP_to_ERP_PIR_via_RFC</td>
<td>Planned Indep...</td>
<td>HANA_CLOUD...</td>
<td>FILE_FORMAT...</td>
<td>2020.03.31.16...</td>
</tr>
<tr>
<td>SOP_APO_Task</td>
<td>SOP_APO_Tas...</td>
<td>SAP Application</td>
<td>HANA_CLOUD...</td>
<td>2015.07.29.15...</td>
</tr>
<tr>
<td>SOP_ECC_Task</td>
<td>SOP_ECC_Tas...</td>
<td>SAP Application</td>
<td>HANA_CLOUD...</td>
<td>2015.07.29.15...</td>
</tr>
</tbody>
</table>
Flow [IBP_to_ERP_PIR]

Drag sources and transforms onto the canvas and then connect them

How to map the ERP function
- In the intermediate datastore for the S/4HANA / ERP system load definition of function module /IBP/ETS_PIR_IN_RFC
- Delete transform CallRFC above
- Replace it with a transform of type Web Service or Function Call
  - Name it CallRFC again
  - Create the mapping arrows from PrepareRFC to CallRFC and Call RFC to GetRFCOutput
  - In CallRFC load the function definition to the output
  - Map all first level nodes of PrepareRFC (e.g. CT_PIR_IN, IV_PROCESS_PIR) to the corresponding nodes of CallRFC

How to map the IBP keyfigure table
- In source datastore of type IBP load the keyfigure table definition SOP<PlanningArea><ExamplePingArea>
  - Delete the source table above
  - Replace it by the newly loaded one
  - Recreate the mapping arrow from source table to transform QueryAndFilter

How to map the dummy output file:
In the output datastore of type File Format Group do:
- Create a file format from scratch
- Name it DUMMY_OUTPUT_FILE
  - Click OK
- Add a field DUMMY with type VARCHAR(1)
  - Save the changes
  - If you chose a different name you need to copy the dataflow to a new target

Dependency on support packages of the SAP S/4HANA or SAP ERP supply chain integration add-on for SAP Integrated Business Planning component release IBP ECC 110: 0013 (2020-05): Function Module /IBP/ETS_PIR_IN_RFC

DUMMY_OUTPUT_FILE.csv
Adapt the dataflow
Delete and recreate transform CallRFC

- Mark transform CallRFC
- Delete it
- Confirm by clicking OK
- Create a transform of type Web Service or Function Call by drag and drop at the same position in the dataflow
- Name it CallRFC again
- Recreate the arrows
  - From PrepareRFC to CallRFC
  - From CallRFC to GetRFCOutput
Adapt the dataflow
Load function module definition to transform CallRFC

- Double-click transform CallRFC
- On Output node CallRFC
  - Click action Select Function: Web Service or RFC Function
Adapt the dataflow
Load RFC function module definition

- Mark function module /IBP/ETS_PIR_IN_RFC of your S/4HANA or ERP datastore
- Click OK
Adapt the dataflow
Drag and drop first level nodes in transform CallRFC

- Drag and drop all first level nodes from PrepareRFC to CallRFC
- Close the transform
Adapt PrepareRFC for function modules with other parameters

- The step before is only possible if the parameters in PrepareRFC and CallRFC are the same
- If not please open transform PrepareRFC
- On the output side click Generate schema from Web Service function or RFC Functions
- Select the same function module as in CallRFC
- Recreate all the mappings on all levels from the source transform(s)
- Don’t forget iteration rules and eventually filters for tables
- An iteration rule for the root node is needed for batch processing
- Delete tables from the output that shall not be filled (empty or exporting only)
Output and error handling

- /IBP/ETS_PIR_IN_RFC has an output status field, which is greater zero in case of issues when saving data to the staging table.
- It also has a message table filled with output of the optional direct processing of the staged data.
- Dataflow IBP_to_ERP_PIR prints all messages to the log ordered by severity and throws an exception if:
  - A technical RFC error occurred
  - The status is greater than zero
  - An abort message in processing
- This behavior can be adapted in transform ExceptionIfNeeded.
The behavior of the task can be influenced by the global parameters.

If you change the default value please also adapt the preload script.

Most important ones:

- `$G_LINE_ITEMS_PER_PACKAGE` approximate line items per package, same product location stays together, bigger package sizes are normally faster as long as you don’t run into timeouts or memory issues.

- `$G_PROCESS_PIR` triggers the immediate processing of the staged data in every package.
Run task

- Validate the task and correct it if errors are displayed
- Run the task in the sandbox environment
- For planning the task as a recurring job you need to promote it to production
Monitoring in S/4HANA or ERP

- Call transaction /n/IBP/ETS_PIR_MON in the S/4HANA or ERP system
- You can select by material, plant and session ID (Current Job GUID from the trace log of the task)
- Relevant entries are displayed
- They can be reprocessed and/or deleted