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## PLM Connector

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# PLM Connector

## API Specifications

REVISION TABLE

Rev. n°	Date	Revision intervention
04	25/07/2024	itemOrBOMNo correction
03	18/08/2022	New read API: BOM, BOM versions, BOM lines
02	18/01/2021	New fields and fields lenght correction
01	07/12/2020	Emission

## SUMMARY

1	PREMISE.....	4
2	AUTHENTICATION.....	4
3	ENDPOINT.....	4
4	READ API.....	5
	4.1 Item categories.....	5
	4.2 Units of measure.....	5
	4.3 Templates.....	5
	4.4 ExtraData configurations.....	5
	4.5 Routings.....	6
	4.6 BOM.....	6
	4.7 BOM version.....	6
	4.8 BOM lines.....	7
5	WRITE API.....	7
	5.1 Items.....	7
	5.2 Items DataSet.....	8
	5.3 BOM.....	9
	5.3.1 BOM lines.....	9
	5.4 BOM DataSet.....	9
	5.5 ExtraData.....	9
	5.6 Path.....	9

## 1 PREMISE

This document is intended to describe the connection methods and the structure of the APIs published by the Business Central "PLM Connector" app.

## 2 AUTHENTICATION

Business Central published APIs support two types of authentication:

- Base Authentication
- OAuth2

Based on the environment on which the app is published, it is advisable to use a different type of authentication, in particular:

Environment	Base Auth	OAuth2
Container (bccontainerhelper)	Supported	Not supported
Onprem	Depending on the installation configuration	Depending on the installation configuration
SaaS (Sandbox)	Supported	Supported
SaaS (Production)	Deprecated from BC18	Supported

## 3 ENDPOINT

The API endpoint is defined by a variable component and a fixed component.

For convenience, in this document the following variables will be used:

- `{{baseEndpoint}}` : specifies the first part of the API endpoint
- `{{tenant}}` : specifies the name of the tenant that publishes the API
- `{{companyId}}`: specify the id of the company that publishes the API

These variables will be replaced with the appropriate values of the environment that publishes the API.

Some variable components differ according to the type of Business Central installation and are composed as follows:

Variable	Onprem or container	SaaS
<code>{{baseEndpoint}}</code>	Composed by baseurl:port/servicename (example: <code>http://BusinessCentral17:7048/BC</code> )	Composed by <code>https://api.businesscentral.dynamics.com/v2.0/TenantID/environmentname</code> (example: <code>https://api.businesscentral.dynamics.com/v2.0/4f247163-247e-4b83-bfcd-4f148bc690c3/SandboxTest</code> )
<code>{{tenant}}</code>	Used as parameter (example: <code>?tenant=default</code> ). It is mandatory only in the case of containers or multi-tenant installations.	To not specify because part of the baseEndpoint

Below is the endpoint used to call the function that retrieves the list of available companies.  
`{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies?tenant={{tenant}}`

A real example of the previous call could be:

`http://BusinessCentral17:7048/BC/api/alterna/plmConnector/v1.0/companies?tenant=default`

## 4 READ API

Data reading APIs are provided which can be consulted through an OData-type REST call.

In case of a successful call, all the answers will be json files, composed of a "value" array, which will contain a list of data structures, specified in detail in the following paragraphs. All responses have an "id" field that is generated by BC to uniquely recognize the record.

Data types must be formatted as follows:

- Boolean: true/false
- Date: AAAA-MM-GG (example: 2020-10-15)
- DateTime: AAAA-MM-GGTHH:MM:SS.MMMZ (example: 2020-10-15T09:55:24.053Z)

### 4.1 Item categories

Method: GET

Endpoint: {{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/itemCategories

Json Response:

Field	Type	Notes
code	Text[20]	
description	Text[100]	
parentCategory	Text[20]	
hasChildren	Boolean	
lastModifiedDateTime	DateTime	

### 4.2 Units of measure

Method: GET

Endpoint: {{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/unitsOfMeasure

Json Response:

Field	Type	Notes
code	Code[10]	
description	Text[50]	
symbol	Text[10]	
internationalStandardCode	Code[10]	
lastModifiedDateTime	DateTime	

### 4.3 Templates

Method: GET

Endpoint: {{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/itemTemplates

Json Response:

Field	Type	Notes
code	Code[10]	
description	Text[50]	

### 4.4 ExtraData configurations

Method: GET

Endpoint: {{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/configExtraData

Json Response:

Field	Type	Notes
type	Code[20]	

code	Code[20]	
description	Text[100]	

#### 4.5 Routings

Method: GET

Endpoint: `{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/routings`

Json Response:

Field	Type	Notes
no	Code[20]	
type	Text[10]	
status	Text[20]	
description	Text[100]	
description2	Text[100]	
lastModifiedDate	DateTime	

#### 4.6 BOM

Method: GET

Endpoint:

`{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/boms?$expand=bomLines`

Json Response:

Field	Type	Notes
no	Code[20]	
description	Text[100]	
description2	Text[100]	
status	Text	Values allowed: New, Certified, Under Development, Closed
unitOfMeasureCode	Code[10]	
versionNos	Code[20]	
comment	Boolean	
creationDate	Date	
lastDateModified	Date	
lowLevelCode	Integer	
searchName	Code[20]	
noSeries	Code[20]	
bomLines	Json Array	See 4.8 "BOM lines"

#### 4.7 BOM version

Method: GET

Endpoint:

`{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/bomVersions?$expand=bomLines`

Json Response:

Field	Type	Notes
productionBomNo	Code[20]	
versionCode	Code[20]	
description	Text[100]	
status	Text	Values allowed: New, Certified, Under Development, Closed
unitOfMeasureCode	Text[10]	
lastDateModified	Date	
noSeries	Text[20]	
bomLines	Json Array	See 4.8 "BOM lines"

#### 4.8 BOM lines

Method: GET

Endpoint: {{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/bomLines

Json Response:

Field	Type	Notes
productionBomNo	Code[20]	
lineNo	Integer	
versionCode	Code[10]	
type	Text	Values allowed: " ", Item, Production BOM
no	Code[20]	
description	Text[100]	
unitOfMeasureCode	Code[10]	
quantity	Decimal	
position	Code[10]	
position2	Code[10]	
position3	Code[10]	
leadTimeOffset	Text	
routingLinkCode	Code[10]	
scrapPerc	Decimal	
variantCode	Code[10]	
comment	Boolean	
startingDate	Date	
endingDate	Date	
length	Decimal	
width	Decimal	
weight	Decimal	
depth	Decimal	
calculationFormula	Text	Values allowed: " ", Length, Length * Width, Length * Width * Depth, Weight, Fixed Quantity
quantityPer	Decimal	

The same structure is used in the "bomLines" Json Array elements contained in "BOM" and "BOM version".

## 5 WRITE API

### 5.1 Items

Method: POST

Endpoint: {{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies/{{companyId}}/plmItems

Json Body:

Field	Type	Notes
itemNo	Code[20]	
description	Text[100]	
description2	Text[50]	
itemCategoryCode	Code[20]	
itemTemplateCode	Code[10]	
unitofMeasureCode	Code[20]	
replenishmentSystem	Text	Values allowed: Purchase, Prod. Order, Transfer, Assembly
netWeight	Decimal	
routingNo	Code[20]	
bomNo	Code[20]	

userId	Code[50]	
creationDate	Date	
exportDateTime	Datetime	
extraData	Json Array	See 5.5 "ExtraData"
paths	Json Array	See 5.6 "Paths"

## 5.2 Items DataSet

Method: POST

Endpoint:{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies{{{companyId}}}/plmItemsDataset

Json Body:

Campo	Tipo	Note
datasetId	Guid	
plmItems	Json Array	See 5.1 "Items"



### 5.3 BOM

Method: POST

Endpoint:{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies{{{companyId}}}/plmBoms

Json Body:

Field	Type	Notes
bomNo	Code[20]	
description	Text[100]	
unitOfMeasureCode	Code[10]	
versionNo	Code[20]	
versionStartingDate	Date	
userId	Code[50]	
creationDate	Date	
exportDateTime	Datetime	
extraData	Json Array	See 5.5 "ExtraData"
plmBomLines	Json Array	See 5.3.1 "BOM lines"

#### 5.3.1 BOM lines

Json plmBomLines:

Field	Type	Notes
lineNo	Integer	
lineType	Text	Values allowed: " ", Item, Production BOM
itemOrBOMNo	Code[20]	
description	Text[100]	
unitOfMeasureCode	Code[10]	
quantity	Decimal	
startingDate	Date	
endingDate	Date	
extraData	Json Array	See 5.5 "ExtraData"

### 5.4 BOM DataSet

Method: POST

Endpoint:{{baseEndpoint}}/api/alterna/plmConnector/v1.0/companies{{{companyId}}}/plmBomsDataset

Json Body:

Field	Type	Notes
datasetId	Guid	
plmBoms	Json Array	See 5.3 "BOM"

### 5.5 ExtraData

Json ExtraData:

Field	Type	Notes
type	Code[20]	
code	Code[20]	

### 5.6 Path

Json Path:

Field	Type	Notes
path	Text[250]	