

External DevOps API in Focused Build

How to integrate work items with external DevOps tools

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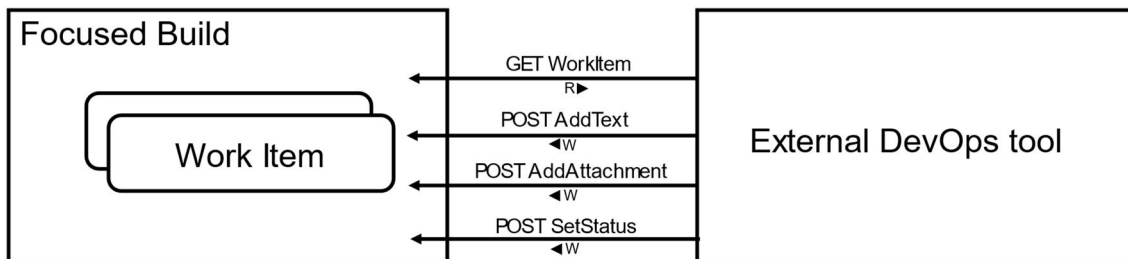
1 OVERVIEW

In the context of Focused Build, an external DevOps API is provided. This API is an OData service named /SALM/EXT_DEVOPS_INTEG and enables external DevOps tools, for example Jenkins, to access the information of a work item in Focused Build via an OData service and additionally to send attachments, create new texts, and perform a status change.

This API only provides inbound methods and supports only the standard Focused Build work item transaction types S1CG (General Change) and S1MJ (Normal Change).

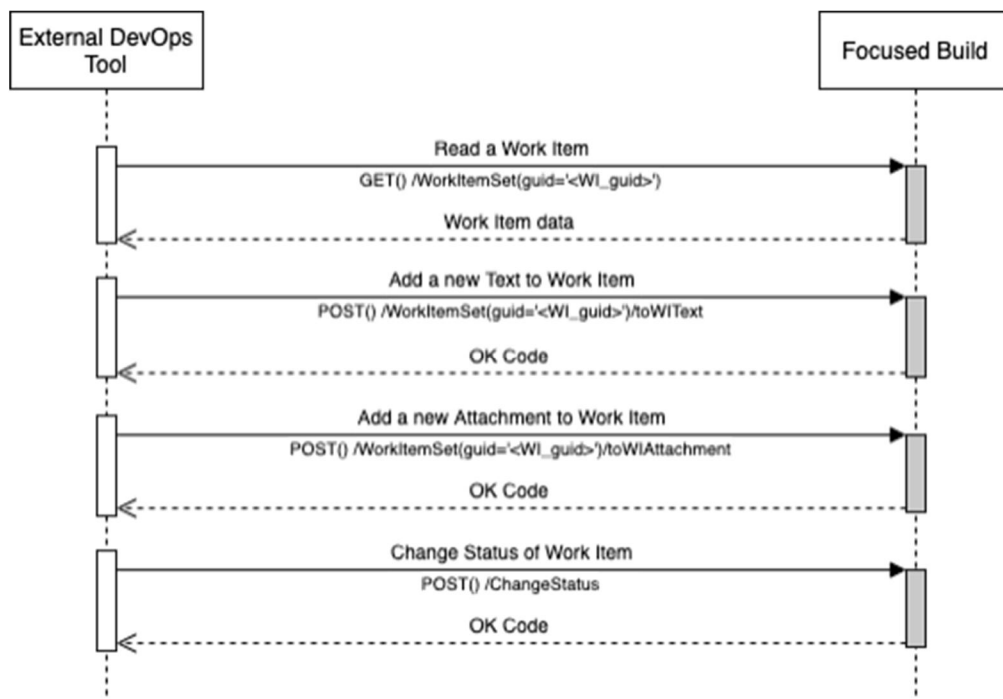
The SAP Solution Manager side of the API is delivered as part of the ST-OST add-on from SP08 on, but the integration on the external tool side is not delivered by SAP due to the possible number of variations (combination of different tools with different versions/setup/Customizing).

This document describes the capabilities of the API and provides the necessary technical details to build an integration on the external tool side.



The API consists of four methods:

- GET /WorkItemSet method: Read the information of a work item
- POST /WorkItemSet/toWIText method: Create a new plain text in a work item
- POST /WorkItemSet/toWIAttachment method: Send and store a new attachment file in a work item
- POST /ChangeStatus method: Change the status of a work item



2 TECHNICAL PREREQUISITES

Please make sure you have successfully executed the **Activating SALM_FB Service** and **Defining System Aliases for OData Services** activities for application "External Integration API" described in the Focused Build Configuration Guide.

The access to this API is secured by the Internet Communication Framework of the NetWeaver stack of the SAP Solution Manager server and requires a service user. A standard role SAP_OST_FB_DEVOPS_INT is delivered as part of Focused Build SP08. For more information about how to use the standard delivered authorization roles, see the Focused Build Security Guide.

3 READ A WORK ITEM FROM AN EXTERNAL TOOL

The OData service /SALM/EXT_DEVOPS_INTEG provides an HTTP GET method as part of the API to read the information of a work item in Focused Build. The method allows the retrieval of the header information of a work item and the associated information of texts, attachments, multilevel categorization and release.

3.1 OData Web Service Endpoint

The OData Web service endpoint on the SAP Solution Manager side is:

https://<SolMan host>:<https port>/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/WorkItemSet(guid=guid'<Work Item GUID>')

Supported HTTP Methods: GET

Mandatory URL Query Parameters:

- **guid:** This parameter must contain the GUID of the work item to access in the following format:
00000000-0000-0000-0000-000000000000.
Example value: 42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97

Optional URL Request Parameters:

- **\$expand:** This parameter indicates whether additional associated entities need to be included in the response. The value can be a list of the following possible values, separated by comma:
 - toWIActualRelease
 - toWIAttachment
 - toWIText
 - toWICategory

Optional HTTP Header Request Parameters:

- **Accept:** This parameter advertises which content types, expressed as MIME types, the client is able to understand. The default value is *application/atom+xml*.
Example value: *application/json*

3.2 OData Request Payload Format

It should be left blank.

3.3 OData Response Payload Format

The generated payload provides the following properties:

Property	Description
guid	GUID of the work item
changedAt	Timestamp of the last modification of the work item
classification	WRICEF classification ID
status	User status ID
statusTxt	User status text in service user logon language
classificationTxt	WRICEF classification text in service user logon language
createdAt	Timestamp of creation of the work item

effortPt	Effort points
local	Local flag
objectId	Object ID of the work item
priority	Priority ID
priorityTxt	Priority text in service user logon language
processType	Transaction type of the work item
title	Title of the work item
url	Absolute URL for http access to the work item on the Focused Build user interface
valuePt	Value points
toWIText/refGuid	GUID of the work item of the associated entity
toWIText/textType	Text ID of the text entry
toWIText/changedAt	Timestamp of the last modification of the text entry
toWIText/textContent	Text content of the text entry
toWIActualRelease/refGuid	GUID of the work item of the associated entity
toWIActualRelease/releaseClass	Associated Change Control Landscape of the release
toWIActualRelease /releaseNo	Release number
toWIActualRelease/releaseType	Major or minor release classification
toWIActualRelease/cycleNo	Release number of the associated release
toWIActualRelease/cycleTitle	Title of the associated release
toWIActualRelease/goLiveDate	Established go-live date of the release
toWICategory/refGuid	GUID of the Work Item of the associated entity
toWICategory/catId	Multilevel categorization category ID
toWICategory/guid	Multilevel categorization category GUID
toWICategory/level	Multilevel categorization category hierarchy level
toWICategory/title	Multilevel categorization category title in service user logon language
toWICategory /parent	Multilevel categorization parent category GUID
toWIAattachment/refGuid	GUID of the work item of the associated entity
toWIAattachment/fileName	File name of the attachment
toWIAattachment/fileName	Size in byte of the attachment
toWIAattachment/documentId	GUID of the attachment
toWIAattachment/url	Absolute URL of the attachment in the Solution Manager content server

3.4 Example Call

The following example retrieves all information from a work item in one single call:

```
GET
https://myfbhost.com:443/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/WorkItemSet(guid=guid'42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97')?$expand=toWIActualRelease,toWIAattachment,toWIText,toWICategory
```

Header request parameters:

- Accept: application/json

Request Body: <empty>

Example Response Body:

```
{
  "d": {
    "guid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
    "changedAt": "/Date(1623064345000)/",
    "classification": "N",
    "status": "E0014",
    "statusTxt": "In Development",
    "classificationTxt": "Non-Functional",
    "createdAt": "/Date(1620391699000)/",
    "effortPt": 50,
    "local": "",
  }
}
```

```

"objectId": "8000031436",
"priority": "2",
"priorityTxt": "2: High",
"processType": "SLCG",
"title": "Example Work Item for API",
"url": "https://myfbhost.com:443/sap/bc/ui2/flp?sap-client=001&GUID=42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97&sap-language=EN#Action-genericApp?configId=3&/configId/3/workspace/42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
"valuePt": 10,
"toWIText": {
  "results": [
    {
      "refGuid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
      "textType": "CR01",
      "changedAt": "/Date(1620388899000)/",
      "textContent": "This is a comment"
    }
  ]
},
"toWIActualRelease": {
  "refGuid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
  "releaseClass": "MyCCL",
  "releaseNo": "1.0.0",
  "releaseType": "Major Release",
  "cycleNo": "8000000000",
  "cycleTitle": "My Release 1.0",
  "goLiveDate": "20211231"
},
"toWICategory": {
  "results": [
    {
      "catId": "CAT1_CAT01",
      "guid": "5CF3FCDCEC001EDB88E6B8A3BDA47A8B",
      "level": 1,
      "title": "Applications",
      "parent": "5CF3FCDCEC001EDB88E6B8A3BDA43A8B",
      "refGuid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97"
    },
    {
      "catId": "CAT1_CAT01_02",
      "guid": "5CF3FCDCEC001EDB88E6B8A3BDA65A8B",
      "level": 2,
      "title": "Non-Functional",
      "parent": "5CF3FCDCEC001EDB88E6B8A3BDA47A8B",
      "refGuid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97"
    },
    {
      "catId": "CAT1_CAT01_02_01",
      "guid": "5CF3FCDCEC001EDB88E6B8A3BDA67A8B",
      "level": 3,
      "title": "Performance",
      "parent": "5CF3FCDCEC001EDB88E6B8A3BDA65A8B",

```

```

        "refGuid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97"
    }
}
],
"toWIAttachment": {
    "results": [
        {
            "refGuid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
            "fileName": "My log file.txt",
            "fileSize": "85576",
            "documentId": "42010AEECF751EEBABE64FBCFF755F97",
            "document": "",
            "url":
"http://myfbhost.com:443/sap/bc/contentserver/001?get&pVersion=0046&contRep=CRMORDER&docId=42010AEECF751EEBABE64FBCFF753F97&compId=My%20log%20file.txt&accessMode=r&secKey=MIIBJgYJKoZIhvcNAQcCoIIBFzCCA
RMCAQExCzAJBgUrDgMCGGUAMAsGCSqGSIb3DQEHAATGB8zCB8AIBATBGMDoxCzAJBgNVBAYTAkRFRMQ8wDQYDVQQKEwZTQVAtQUcxDAKBgNVBAsTA09GVDEMMMAoGA1UEAxMDT0ZUAggKIBGRGAATATAJBgUrDgMCGGUAAoF0wPEPJKoZIhvcNAQkDMQsGCSqGSIb3DQEHA
TAcBgkqhkiG9w0BCQUxDxcNMjEwMTMyODI1WjAjbGkqhkiG9w0BCQQxKgQUUSVERpI1JtELT2aVSwrKQZdUmVEIwCQYHKOZIZ
jgEAwQuMCwCFDn3M776jTtgNvEoDvZ6PtvlmZkpAhQw6FvDuiakXDozu%2Brt3mgNK6EjrA%3D%3D"
        }
    ]
}
}
}
}

```

4 POST A NEW TEXT TO A WORK ITEM FROM AN EXTERNAL TOOL

The OData service /SALM/EXT_DEVOPS_INTEG provides an HTTP POST method as part of the API, to create new texts into a work item. The text is created unformatted.

4.1 OData Web Service Endpoint

The OData Web service endpoint on the SAP Solution Manager side is:

https://<SolMan host>:<https port>/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/WorkItemSet(guid=guid'<Work Item GUID>')/toWIText

Supported HTTP Methods: GET, POST

Mandatory URL Query Parameters:

- **guid:** This parameter must contain the GUID of the work item to access in the following format: 00000000-0000-0000-0000-000000000000.
Example value: 42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97

Mandatory HTTP Header Request Parameters:

- **Content-Type:** This parameter indicates which content type the body is formatted as, expressed as MIME types. This parameter is only expected when sending a POST method.
Expected value: *application/json*

Optional HTTP Header Request Parameters:

- **Accept:** This parameter advertises which content types, expressed as MIME types, the client is able to understand. The default value is *application/atom+xml*.
Example value: *application/json*

4.2 OData Request Payload Format

For a GET method call, no body is expected. The body part should be left blank.

When sending a POST call, the following JSON format body is expected:

```
{
  "textType": "Text type ID for which the new text should be created according to the supported
text types in the customizing",
  "textContent": "Text to be saved for the specified text ID, unformatted"
}
```

4.3 OData Response Payload Format

For a GET method call, see section 3.3 for properties of the associated entity "toWIText".

4.4 Example Call

The following example creates a new text of type "S105" (Comment) in the work item:

```
POST
https://myfbhost.com:443/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/WorkItemSet(guid=guid'42
010AEE-CF75-1EEB-ABE6-4FBCFF74DF97')/toWIText
```

Header request parameters:

- Content-Type: application/json

Request Body:

```
{
  "textType": "S105",
  "textContent": "New Comment Text"
}
```

The expected HTTP response status code is 201 (Created).

5 SEND AN ATTACHMENT TO A WORK ITEM FROM AN EXTERNAL TOOL

The OData service /SALM/EXT_DEVOPS_INTEG provides an HTTP POST method to send and store files as attachments into a work item as part of the API.

5.1 OData Web Service Endpoint

The OData Web service endpoint on the SAP Solution Manager side is:

https://<SolMan host>:<https port>/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/WorkItemSet(guid=guid'<Work Item GUID>')/toWIAttachment

Supported HTTP Methods: GET, POST

Mandatory URL Query Parameters:

- **guid:** This parameter must contain the GUID of the work item to access in the following format:
00000000-0000-0000-0000-000000000000.
Example value: 42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97

Mandatory HTTP Header Request Parameters:

- **content-disposition:** This parameter provides the filename of the file being sent. This parameter should only be included when sending a POST method. The expected format is *filename="<filename>"*.
Example value: filename="my_log_file.txt"
- **Content-Type:** This parameter indicates which content type the body is formatted as and indicates the MIME type of the file being sent. This parameter is only expected when sending a POST method.
Example values: text/plain; image/jpeg; application/pdf

Optional HTTP Header Request Parameters:

- **Accept:** This parameter indicates which content types, expressed as MIME types, the client is able to understand. The default value is *application/atom+xml*.
Example value: application/json

5.2 OData Request Payload Format

For a GET method call the body part should be left blank.

When sending a POST call, the body must contain the content of the file being sent as attachment.

5.3 OData Response Payload Format

For a GET method call, see section 3.3 for properties of the associated entity "toWIAttachment".

5.4 Example Call

The following example sends a plain text file to be attached into a work item:

```
POST
https://myfbhost.com:443/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/WorkItemSet(guid=guid'42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97')/toWIAttachment
```

Header request parameters:

- content-disposition: filename="example_file.txt"
- Content-Type: text/plain

Request Body:

```
{
  "What is Lorem Ipsum?
    Lorem Ipsum is simply dummy text of the printing and typesetting industry.
    Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown
    printer took a galley of type and scrambled it to make a type specimen book. It has survived
    not only five centuries, but also the leap into electronic typesetting, remaining essentially
    unchanged. It was popularised in the 1960s with the release of Letraset sheets containing
    Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker
    including versions of Lorem Ipsum."
}
```

The expected HTTP response status code is 201 (Created).

6 CHANGE THE STATUS OF A WORK ITEM FROM AN EXTERNAL TOOL

The OData service /SALM/EXT_DEVOPS_INTEG provides an HTTP POST method to change the status of a work item as part of the API. The method triggers the standard post-processing framework status change methods, including all customized checks and actions.

6.1 OData Web Service Endpoint

The OData Web service endpoint on the SAP Solution Manager side is:

https://<SolMan host>:<https port>/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/ChangeStatus?guid=guid'<Work Item GUID>'&userStatus='<Target User Status code>'

Supported HTTP Methods: POST

Mandatory URL Query Parameters:

- **guid:** This parameter must contain the GUID of the work item to access in the following format:
00000000-0000-0000-0000-000000000000.
Example value: 42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97
- **userStatus:** This parameter must contain the target user status code to be set.
Example value: E0004

Optional HTTP Header Request Parameters:

- **Accept:** This parameter indicates which content types, expressed as MIME types, the client is able to understand. The default value is *application/atom+xml*.
Example value: *application/json*

6.2 OData Request Payload Format

It should be left blank.

6.3 OData Response Payload Format

When successful, the response returns the header properties of the work item including the new target status. See section 3.3 for the list of properties.

6.4 Example Call

The following example sets the status of a work item to "To be Tested":

POST https://myfbhost.com:443/sap/opu/odata/SALM/EXT_DEVOPS_INTEG_SRV/ChangeStatus?
guid=guid'42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97'&userStatus='E0012'

Header request parameters:

- Accept: application/json

Request Body: <blank>

The expected HTTP response status code is 201 (Created)

Example Response Body:

```
{
  "d": {
    "guid": "42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
    "changedAt": "/Date(1623064345000)/",
    "classification": "N",
    "status": "E0012",
    "statusTxt": "To Be Tested",
    "classificationTxt": "Non-Functional",
    "createdAt": "/Date(1620391699000)/",
    "effortPt": 50,
    "local": "",
  }
}
```

```
    "objectId": "8000031436",
    "priority": "2",
    "priorityTxt": "2: High",
    "processType": "SlCG",
    "title": "Example Work Item for API",
    "url": "https://myfbhost.com:443/sap/bc/ui2/flp?sap-client=001&GUID=42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97&sap-language=EN#Action-genericApp?configId=3&/configId/3/workspace/42010AEE-CF75-1EEB-ABE6-4FBCFF74DF97",
    "valuePt": 10
  }
}
```

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