



API Reference | PUBLIC

Document Version: 3.0 SP21 – 2023-03-21

API Guide for SAP Profitability and Performance Management

Content

- 1 API Guide for OData V4 Processing Service as Part of SAP Profitability and Performance Management. 3**
- 1.1 Getting Started with the API. 3
 - Publish NXI Service Group. 3
 - Set Up Basic Authorization for External Tools. 3
 - CSRF Token for POST, PATCH, DELETE Calls with External Tools. 4
 - Call the API. 4
- 1.2 Processes. 5
 - CreateDeployRunActivityAsync. 5
 - RunActivityAsync. 5
 - CreateInstance. 5
 - GetStatus. 6
- 1.3 OData Entities. 6

1 API Guide for OData V4 Processing Service as Part of SAP Profitability and Performance Management

This guide provides information that supports IT developers and key users in using the OData V4 processing service (API).

1.1 Getting Started with the API

1.1.1 Publish NXI Service Group

If you want to set up the OData V4 processing service, you first have to publish the /NXI/P1_SERVICES service group.

Follow the steps below to publish the service group:

1. Go to transaction /N/IWFND/V4_ADMIN.
2. In the header menu of the *SAP Gateway Service Administration* screen, choose *Publish Service Groups*.
3. On the *SAP Gateway Service Publishing* screen, set the *System Alias* field to "LOCAL".
4. Choose *Get Service Groups*.
5. The system lists all unpublished service groups. Select the /NXI/P1_SERVICES group.
6. Choose *Publish Service Groups* and then, choose *OK*.
7. Add a new customizing request.
8. Go back to the *SAP Gateway Service Administration* screen. In the *Available Services* section, you can now see the service group /NXI/P1_SERVICES.
9. Select your service and choose ► *Service Test* ► *Gateway Client* ⌵, then continue with testing the service.

i Note

You see the *Gateway Client* option when you open the context menu of the *Service Test* button.

1.1.2 Set Up Basic Authorization for External Tools

There is no authentication required when consuming the processing service API using the SAP Gateway.

When using external tools or scripts, select *Authorization Type* = "Basic Auth", and use the SAP GUI username and password. OAuth is currently not supported by OData Version 4.

1.1.3 CSRF Token for POST, PATCH, DELETE Calls with External Tools

When consuming the API outside of the SAP Gateway, you need to pass the CSRF token. This is an OData V4 standard mechanism to improve the security against forgery attacks. It is only applicable for calls that affect the database.

Follow the steps below to pass the CSRF token:

1. Perform any GET request (for example, for metadata: [https://ldai3pec.wdf.sap.corp:41800/sap/opu/odata4/nxi/p1_services/default/nxi/p1_analyze/0001/\\$metadata](https://ldai3pec.wdf.sap.corp:41800/sap/opu/odata4/nxi/p1_services/default/nxi/p1_analyze/0001/$metadata)).
2. Add a request header with key "X-CSRF-TOKEN" and value "FETCH".
3. Copy the value from the response header X-CSRF-TOKEN parameter, and use it as a request header for POST PUT, DELETE requests.

1.1.4 Call the API

There are the following ways to call the API:

- Using the SAP Gateway: For more information, see steps 8 and 9 from [Publish NXI Service Group \[page 3\]](#).
- Outside of the SAP Gateway, using external tools/scripts

For the second option, the call URL is of the following format:

```
https://ldai3pec.wdf.sap.corp:41800/sap/opu/odata4/nxi/p1_services/default/nxi/p1_analyze/0001/$metadata
```

i Note

"ldai3pec.wdf.sap.corp:41800" is not a fixed value. It represents the host and port of the local system. To find the correct host and port, follow these steps:

1. Open transaction `/N/IWFND/V4_ADMIN`.
2. In the navigation tree on the left, choose `/NXI/P1_SERVICES > LOCAL > Available Services`.
3. The system displays a list of services in the section `Available Services`.
4. Mark the service `/NXI/P1_PROCESSING` and choose `Service Test > Web Browser`.

i Note

You see the `Web Browser` option when you open the context menu of the `Service Test` button.

5. In the `Select HTTP/HTTPS Protocol` window, choose `HTTPS`.
6. The test protocol is displayed in a new browser window. You find the information about the used host and port in the first part of the URL in this window.

Alternatively you can call transaction `SMMS`. Choose the instance your server is running on, and build the hostname with the values from the structure: `host.domain:port`.

1.2 Processes

1.2.1 CreateDeployRunActivityAsync

This action provides an easy one-shot way of creating, deploying, and running a process activity.

You can use this API to perform the following tasks in one call:

- Create a process instance from a process template
- Update process parameters
- Update process selections
- Deploy the process instance
- Run an executable process activity
- Delete a process instance (optional)
- Update the process activity state (optional)
- Validate the data without a commit to the database (optional)

1.2.2 RunActivityAsync

This action provides an easy way of executing a process activity.

In particular, you can use this API to perform a subset of the operations that function [CreateDeployRunActivityAsync](#) performs in one call:

- Update process parameters
- Update process selections
- Run an executable process activity
- Update the process activity state (optional)
- Validate the data without a commit to the database (optional)

1.2.3 CreateInstance

This action provides an easy way of creating a new process activity based on a template or an existing process.

You can use this API to perform the following tasks in one call:

- Create a process instance from a process template or old process
- Deploy the process instance
- Validate the data without a commit to the database (optional)

1.2.4 GetStatus

This function provides an easy way of checking the status of a [CreateDeployRunActivityAsync](#), [RunActivityAsync](#) or [CreateInstance](#) request. The function returns the name of the result table as well as the relative URL path to the application log.

1.3 OData Entities

The [OData Entities](#) API allows you to access process-relevant information. The following entities are available for CRUD calls:

OData Entity	Table	Description	Related to Other Entities
ENV	/NXI/TP1ENV	Environment	CUP, FCUP
		❁ Example Example GET call: <pre>https:// ldai3pec.wdf.sap.corp:41 800/sap/opu/ odata4/nxi/p1_services/ default/nxi/p1_process- ing/0001/ENV?\$fil- ter=ENV_ID eq 'BW4'</pre>	
ENVF	/NXI/TP1ENVF	Environment Field	ENVFHV
ENVFHV	/NXI/TP1ENVFHV (View)	Environment Fields Hierarchy Values	
CUP	/NXI/TP1CUP	Calculation Unit Processes	ENV, CUPA, AF, AFS
CUPA	/NXI/TP1CUPA	Calculation Unit Process Ac- tivities	CUPAL
CUPAL	/NXI/TP1CUPAL	Calculation Unit Process Ac- tivities Link	
FCUP	/NXI/TP1FCUP	Calculation Unit Process Templates	FCUPA, FS, FF
FCUPA	/NXI/TP1FCUPA	Calculation Unit Process Template Activities	

OData Entity	Table	Description	Related to Other Entities
AF	/NXI/TP1AF	Application Field Details	ENVF
AFS	/NXI/TP1AFS	Application Field Selection Details	ENVF
FF	/NXI/TP1FF	Function Field Details	ENVF
FS	/NXI/TP1FS	Function Field Selection Details	ENVF
AL	/NXI/TP1AL	Application Logs	
		<div style="background-color: #f0f0f0; padding: 5px;"> <p>Example</p> <p>Example GET call with GUID as key:</p> <pre>https:// ldai3pec.wdf.sap.corp:41 800/sap/opu/ odata4/nxi/p1_services/ default/nxi/p1_process- ing/0001/ AL(CLI- ENT='100',GUID=00493 AB8-95B4-2B00- F000-000375970800)</pre> </div>	
ALMSG	/NXI/TP1ALMSG	Application Log Messages	

Constraints

It is not possible to perform the following activities:

- Use \$any keyword
- Return count and business data in a single call
- Pass entities (collections) as parameters of an action or function

Furthermore, OAuth is currently not supported for OData Version 4.

Additional Information



For more information, see SAP Note [3204688](#) and the attached file: *OData V4 Processing Service API.docx*

Important Disclaimers and Legal Information

Hyperlinks

Some links are classified by an icon and/or a mouseover text. These links provide additional information.

About the icons:

- Links with the icon : You are entering a Web site that is not hosted by SAP. By using such links, you agree (unless expressly stated otherwise in your agreements with SAP) to this:
 - The content of the linked-to site is not SAP documentation. You may not infer any product claims against SAP based on this information.
 - SAP does not agree or disagree with the content on the linked-to site, nor does SAP warrant the availability and correctness. SAP shall not be liable for any damages caused by the use of such content unless damages have been caused by SAP's gross negligence or willful misconduct.
- Links with the icon : You are leaving the documentation for that particular SAP product or service and are entering an SAP-hosted Web site. By using such links, you agree that (unless expressly stated otherwise in your agreements with SAP) you may not infer any product claims against SAP based on this information.

Videos Hosted on External Platforms

Some videos may point to third-party video hosting platforms. SAP cannot guarantee the future availability of videos stored on these platforms. Furthermore, any advertisements or other content hosted on these platforms (for example, suggested videos or by navigating to other videos hosted on the same site), are not within the control or responsibility of SAP.

Beta and Other Experimental Features

Experimental features are not part of the officially delivered scope that SAP guarantees for future releases. This means that experimental features may be changed by SAP at any time for any reason without notice. Experimental features are not for productive use. You may not demonstrate, test, examine, evaluate or otherwise use the experimental features in a live operating environment or with data that has not been sufficiently backed up.

The purpose of experimental features is to get feedback early on, allowing customers and partners to influence the future product accordingly. By providing your feedback (e.g. in the SAP Community), you accept that intellectual property rights of the contributions or derivative works shall remain the exclusive property of SAP.

Example Code

Any software coding and/or code snippets are examples. They are not for productive use. The example code is only intended to better explain and visualize the syntax and phrasing rules. SAP does not warrant the correctness and completeness of the example code. SAP shall not be liable for errors or damages caused by the use of example code unless damages have been caused by SAP's gross negligence or willful misconduct.

Bias-Free Language

SAP supports a culture of diversity and inclusion. Whenever possible, we use unbiased language in our documentation to refer to people of all cultures, ethnicities, genders, and abilities.

© 2023 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company. The information contained herein may be changed without prior notice.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

Please see <https://www.sap.com/about/legal/trademark.html> for additional trademark information and notices.