



API Reference | PUBLIC

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# API Guide for SAP Profitability and Performance Management

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# 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 The system lists all unpublished service groups.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_processing/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 `SMICM`. Choose `Services` (third button) and copy the host name from the `HTTPS` entry.

## 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                 |
|              |                       | <b>Example</b><br>Example GET call:<br><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<br>Hierarchy Values   |                           |
| CUP          | /NXI/TP1CUP           | Calculation Unit Processes   | ENV, CUPA, AF, AFS        |
| CUPA         | /NXI/TP1CUPA          | Calculation Unit Process Ac-<br>tivities   | CUPAL                     |
| CUPAL        | /NXI/TP1CUPAL         | Calculation Unit Process Ac-<br>tivities Link  |                           |
| FCUP         | /NXI/TP1FCUP          | Calculation Unit Process<br>Templates  | FCUPA, FS, FF             |
| FCUPA        | /NXI/TP1FCUPA         | Calculation Unit Process<br>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><b>Example</b></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*

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