**Appendix A**

**Configuration of OData and SICF services**

Configuring **OData** and **SICF** services is not just a technical task but a vital step that ensures the seamless interaction of SAP Fiori apps with the SAP backend. This process empowers the front-end Fiori applications, developers, and administrators, enabling them to retrieve, update, and display data from the SAP system, thereby playing a pivotal role in the setup of SAP Fiori.

This chapter will explore OData and SICF services in the SAP Fiori landscape. As SAP administrators, developers, and technical staff, your role in configuring, activating, and deactivating these services is crucial and active. You play a pivotal role in the SAP Fiori setup, and your contributions are integral to the seamless interaction of SAP Fiori apps with the SAP backend**.**

**Note:** During the configuration process, the Basis team activates the necessary OData services through a Task List, adhering to SAP's best practices. Ideally, all relevant OData services should be activated before commencing any development work. It is important to note that SICF services are automatically activated in conjunction with their corresponding OData services, ensuring seamless functionality.

### OData Services Configuration

Fiori OData services are RESTful APIs that enable seamless communication between SAP Fiori applications, such as front-end and back-end systems. They leverage the Open Data Protocol (OData) to expose the underlying data model, support querying and filtering, enable **CRUD** operations, and use standard data formats like JSON or XML. These services are crucial in Fiori apps, facilitating data retrieval, updates, and function execution. They offer standardization, flexibility, performance optimization, and security benefits. Configuring these services involves activation, maintenance, and authorization setup.

**Note:** OData Service must be properly activated and configured.

### SICF Services Configuration

By defining and configuring SICF services, you, as SAP administrators, developers, and technical staff, control how external clients, including browsers and mobile devices, interact with SAP systems over the web. This framework enables access to various SAP web-based applications, including those built with Fiori, and plays a vital role in security by providing authentication, authorization, and logging capabilities. Your role in activating these services is crucial to ensure Fiori apps can communicate with the backend.

## Integration of OData and SICF Services in SAP Fiori

Once OData and SICF services are configured, they enable SAP Fiori apps to retrieve and update data from the SAP backend. Here is how they integrate:

* **OData Services** provides the necessary data retrieval, update, and delete operations that Fiori apps rely on for their functionality. They define how data is accessed and manipulated within the SAP backend.
* **SICF Services** handles the communication layer, ensuring that HTTP/HTTPS requests are processed correctly between the Fiori front-end and the SAP back-end. SICF services enable data transport from OData services to the Fiori user interface.

### Activate OData Service

Let us assume the required OData Service is inactive in this specific scenario. We will utilize transaction **/N/IWFND/MAINT\_SERVICE** within the SAP system to activate it.

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Figure A-1: Transaction /N/IWFND/MAINT\_SERVICE initial window

To search and find out if the OData service has already been activated or not, we can click the **Find Filter** icon, and a **Filter For Service Catalog** box will appear where we need to search for the service name. For example, let us enter the service name with a **prefix \*** at the beginning and end of the service name in the space area. The **Technical Service Name** entry with the service name **MM\_PUR\_MAT\_PROPOSE\_CTR\_SRV** is displayed in the figure below.

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Figure A-2: Search for the OData service input screen

Click the icon **Continue**  àà  to proceed. The system then finds a match, as shown in the Figure below.

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Figure A-3: No matching OData Service found

The system found no matching **OData service** activated, as shown in the Figure above. It means that the OData service **MM\_PUR\_MAT\_PROPOSE\_CTR\_SRV** has not been activated and this service can be added and activated.

To activate the service, we need to find the service by using the tab. A window titled **Add Selected Services** opens to search for the OData Service.

Enter the **OData Service** name and ensure the **Co-Deployed** () option check box is selected in an Embedded System, as shown in the Figure below.

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Figure A-4: Search for the OData Service Window

**Note:** The System Alias is **Local** in the case of **Embedded deployment**; hence, we do not need to enter it. However, the **System Alias** must be entered for **the central hub deployment** to fetch **OData services**.

To find the OData service, select the Get Service option at the top left corner of the above Figure. The OData Service is found and populated as illustrated in the figure below.

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Figure A-5: OData Service information found

The above figure shows that the OData Service was found but is not activated. To select the Service, click the **Select All** icon, highlighting or selecting the entire row of **OData Services**, as displayed in the Figure below.

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| A screenshot of a computer  AI-generated content may be incorrect. |

Figure A-6: OData Service Selected for activation

The next step involves adding the services by selecting the tab **Add** Selected Services from the above figure. This will open a new **Add Services** window, as shown in the Figure below.

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Figure A-7: Add Services option window is displayed.

The system will create and register the **Z** version of the OData service. The OData service appears as **ZMM\_PUR\_MAT\_PROPOSE\_CTR\_SRV** as shown in the figure above. This **OData service** is your **ISWG** (**ZMM\_PUR\_MAT\_PROPOSE\_CTR\_SRV**) entry within the role, and the original entry (**MM\_PUR\_MAT\_PROPOSE\_CTR\_SRV**) becomes your **IWSV** entry in the role. Enter the package name in the **Package Assignment** field if the activated OData service needs to be transported. Use the search option to find the **packag**e name that you would like to use for transporting the OData service. In our example, we are going to use a package name, **ZFIORI\_PKG**, as shown in the Figure below.

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| A screenshot of a computer  AI-generated content may be incorrect. |

Figure A-8: Package added for OData Service

Click the icon **Continue** àà  to proceed.

A new window box titled **Prompt for Local workbench request** opens, add the transport created earlier, as shown in the Figure below.

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Figure A-9: Workbench transport Request assigned

Click the icon **Continue** àà  to proceed.

An information box which displays a message that **Service MM\_PUR\_MAT\_PROPOSE\_CTR\_SRV was created and its metadata was loaded successfully**, as shown in the Figure below. This message indicates that the OData was successfully registered and activated.

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Figure A-10: OData Service created - Metadata was loaded successfully.

Click the icon **Continue** àà  to proceed, and the window opens below with the OData service section as empty, because the same has been activated, as shown in the Figure below.

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Figure A-11: Blank OData Services screen

Click the Back icon and search for the recently activated OData Service. The screen below displays the activated OData Service.

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Figure A-12: Activated OData Service found and displayed

**Note:** For Hub deployment, you need to add a System Alias for the OData Service.

In the above figure, the ICF Nodes subpanel displays a green status. To check if the service is functioning, click the Call Browser tab, which successfully opens the web browser display, as shown in the Figure below.

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Figure A-13: Call Browser is working correctly for the OData service

The **Call Browser**  option lets you open the OData service in your default web browser. This helps you check if the service is reachable and working. You will usually see the service metadata in **XML format**. This is a quick way to confirm the service URL, check for any fundamental connectivity issues, and ensure the service is registered and available.

The **SAP Gateway Client** launches a testing tool in the SAP GUI for testing OData services from the backend. You can simulate GET, POST, PUT, and DELETE operations, pass request headers, and check responses in XML or JSON formats. This tool helps developers and admins debug and validate service behavior. T

The ICF Node  displays the Internet Communication Framework (**ICF**) node linked to the registered OData service. For proper functionality, the OData service must have an active ICF service path under **/sap/opu/odata** in transaction SICF. If the ICF node is inactive, the OData service will be inaccessible. This tab is essential for troubleshooting any errors. The ICF Nodes option presents four options listed below and illustrated in the figure.

* Activate
* Deactivate
* Delete
* Configure (SICF)

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| A screenshot of a computer  AI-generated content may be incorrect. |

Figure A-14: ICF Node options available

The next step is to check if ICF services are activated. The **Configure (SICF)** button under the ICF Node tab is a shortcut that takes you directly to transaction **SICF**, opening the exact ICF service node tied to the selected OData service. This lets you quickly check or change settings such as **activation status**, **logon behavior**, **authentication methods**, and **error handling** for that service. It is beneficial for activating inactive services or adjusting security settings without manually navigating through the SICF hierarchy. Selecting the **Configure (SICF)** opens a window titled **Define Services,** which displays the associated **ICF Service** for the **OData Service**, as shown in the Figure below.

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Figure A-15: ICF Service Displayed

Right-clicking on the ICF Service in the left panel opens a small box allowing you to perform various functionalities, as shown below.

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Figure A-16: ICF Service is activated

The above figures depict that the ICF service is **activated**. Remember, when you activate the OData Service, it will also **automatically activate the linked ICF Services**. When an OData service is activated, any associated ICF services that are required will also get activated automatically due to their dependencies, ensuring a seamless and interconnected service environment. These additional ICF services will be marked with an **asterisk (\*ICF)** in the SAP Fiori Apps Library as shown in the Figure below.

In this case, the OData Service, which has multiple ICF services marked with an **asterisk \*** as shown in the figure below, will be automatically updated when the main OData service is activated due to dependencies.

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Figure A-17: Multiple ICF services

### ICF Nodes Options

#### Activate

The **Activate** option **activates** the selected ICF node/service. A service must be active for a Fiori app to be accessed in the browser. Without activation, the frontend cannot connect to the backend. This is necessary after installing/upgrading a Fiori app or enabling a service from the Fiori Apps Library. If the OData service is inactive, the Status will be displayed with a **yellow** triangle symbol. Once activated, it will turn green ..

#### Deactivate

The **Deactivate** option allows you to **deactivate** a selected ICF node or service. This feature is handy for **security** and preventing exposure to a specific service. Instead of deleting the service, you can deactivate it, which enables you to temporarily disable access to a Fiori app or service without losing its configuration.

#### Delete

The **Deactivate** option completely **removes** the ICF node or service entry. You should typically avoid using this option unless you know the purpose of removing it. Deleting a service will require you to **re-register** it if you need it again. The **Delete** option is rarely used and is employed during cleanup or when replacing old or custom services.

#### Configure (SICF)

The **Configure (SICF)** opens the **SICF transaction** and jumps to the node’s configuration, as explained in the above section.

## Summary

Configuring OData and SICF services is critical in setting up SAP Fiori apps. OData services ensure data can be accessed and manipulated, while SICF services handle the communication required to deliver this data to the Fiori apps. Properly configuring and activating these services ensures that your SAP Fiori apps function correctly, providing a seamless and responsive user experience.