Creating an “External Service” type Callable Object in Guided Procedures
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# Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Represents</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Example Text</em></td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Emphasized words or phrases in body text, graphic titles, and table titles.</td>
</tr>
<tr>
<td><strong>EXAMPLE TEXT</strong></td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td><strong>&lt;Example text&gt;</strong></td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
</tr>
<tr>
<td><strong>EXAMPLE TEXT</strong></td>
<td>Keys on the keyboard, for example, <code>F2</code> or <code>ENTER</code>.</td>
</tr>
</tbody>
</table>

# Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>☢️</td>
<td>Caution</td>
</tr>
<tr>
<td>📚</td>
<td>Example</td>
</tr>
<tr>
<td>📜</td>
<td>Note</td>
</tr>
<tr>
<td>🔄</td>
<td>Recommendation</td>
</tr>
<tr>
<td>∈</td>
<td>Syntax</td>
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</tbody>
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About This Document

This tutorial describes how you create an “External Service” type Callable Object using Guided Procedures Design Time.

Business Scenario

The purpose of an “External Service” type Callable Object is to be able to define a callable object that
- references a service available via RFC-enabled function modules from an SAP system

NOTE: RFC-enabled function modules are ABAP programs that can be executed from a remote SAP system in a distributed environment. They are created in the ABAP Workbench Function Builder. For example, BAPIs (Business Application Programming Interface) are implemented as RFC-enabled function modules.

The Guided Procedures (GP) framework allows you to import any RFC-enabled function module as a callable object and to use it in a business process that you model with GP. In addition, you do not need to modify the implementation of the existing function modules to fit any specific requirements. The framework itself integrates the function modules into the GP environment.

After creating the callable object at Design Time, you can make use of it by calling it from an Action object (please see How-To Create an Action in Guided Procedures).

As part of a Guided Procedure step, an “External Service” type Callable Object allows you to execute additional functions or services required to:
- Pre-fill an interactive form with data
- Validate the data in an interactive form
- Perform any kind of background checks

The process of importing an RFC-enabled function module into GP comprises the following steps:
1. Configuring an endpoint [2]
2. Exposing a BAPI as a callable object
Exposing a BAPI as a Callable Object in Guided Procedures

**GP Administration**
- **Endpoint Definition**
  - Define parameters for connection to the SAP system

**GP Design Time**
- **Callable Object Definition**
  - Search for the BAPI that you want to expose
  - Define the exception handling mode
  - Test and activate it
  - Attach it to an action, and use it in a process template

**GP Runtime**
- **Callable Object Execution**
  - The BAPI is invoked in the background when you execute the callable object.

**Result**
Once you have exposed the BAPI as a callable object and activated it, you can attach it to actions and invoke it within a business process. The BAPI is executed in the background and the output is displayed.

**General Prerequisites**
- CAF GP installed
- You need an R/3 or ERP System and you need an Endpoint Alias for RFC remote call to be configured to enable a connection to the required R/3 or ERP system. If this has not yet been done, this tutorial will describe the steps to carry it out.
- An RFC-enabled function module e.g. ZPREFILL_ADOBEFORM (you need to create it in your own SAP test system) that has 2 input parameters (IN_BEGIN_DATE and IN_END_DATE) and 2 output parameters (OUT_BEGIN_DATE and OUT_END_DATE) with the following code logic: OUT_BEGIN_DATE = sy-datum and OUT_END_DATE = sy-datum
- In the Administration module of Guided Procedures, an endpoint to the SAP system that contains the RFC-enabled function module
Approaches to building up our model

You are free to choose either the top-down approach and create the Process, Block and Action and then insert a new callable object; or you can start with the callable object first without having any other model item.

- Top-down approach
  In this case you first create all the Design Time objects (Process, Block, and Action) that will make use of this callable object. For further details on this top-down approach see Error! Reference source not found..

- Bottom-up approach
  In this case you create the callable object first and insert it into the embedding Design Time objects later.

Applicable Releases

This tutorial is compatible with the following release “Beginning with SAP NetWeaver 2004s SPS06”.

Disclaimer

Any software coding and/or code lines / strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, except if such damages were caused by SAP intentionally or grossly negligent.

The Step By Step Solution

In the first optional part of the solution we will check and if necessary configure an Endpoint Alias that is required for communicating with the Composite Application Service. (An Endpoint Alias is a communication endpoint between your J2EE Engine and the connected SAP Systems).

You can skip this section if you already have an endpoint configured.

The second part will guide you through the steps to implement the callable object that wraps the Composite Application Service thus making it capable for integration.
Check or create Endpoint Alias

First you have to ensure that an Endpoint Alias exists for your server, where the CAF Core service that you want to call is available.

   Navigate to tab Guided Procedures and to tab Administration.

2. Click on the Configure Endpoints link under SAP System.

3. On this screen choose the “Endpoint Alias for RFC Remote Function Call (RFC)” from the dropdown list as the Endpoint Alias Type and press the Go button.

4. In the result table you can see the list of configured Endpoint Aliases.
   Here you can Add new aliases, Edit existing aliases, or even Remove them.
Check that the appropriate Endpoint Alias for Remote Function Call (RFC) is connected to the relevant R/3 or ERP system.

5. If there is no Endpoint Alias defined for the required R/3 or ERP system then click on the Add…

6. Complete the required entries defining your system and enabling the access to it as shown.

7. Enter an Endpoint Alias Name, in our example it is “FastTrack1”

8. Choose the Endpoint Alias Type: “Endpoint Alias for RFC Remote Function call (RFC)”

9. Select “Connection Defined by User” to define the Connection Mode.

10. Enter the appropriate Client and User.

11. Enter the password for the Security Credentials

12. Select “Server Logon” to define the Server Mode

13. Enter the appropriate Application Server and System Number


15. Enter the Portal Alias for the SAP System that also has first to be maintained in the Portal.

16. Finally, click Test to test the connection.

17. If the Test result is as shown press
“Save” to save the Endpoint Alias for RFC Remote Function call (RFC).

18. You should see the "Endpoint Alias for RFC Remote Function call (RFC)" named FastTrack_FT1 in the result table.

Create Callable Object in Guided Procedures Design Time

Open your Enterprise Portal via http://<Server>;<Port>/irj/portal, navigate to tab Guided Procedures and to tab Design Time.
1. On the left of the screen in the ‘You Can’ section, choose **Create Callable Object** to open the Callable Object Design Time.
2. In the first screen select the type of the callable object: **External Service**.

3. Enter the basic data for the callable object:
   - Name
   - Description
   - Language
   - Location (Click the **Choose** button to select the folder in which you want to store it)

4. Click **Next**.
5. Click Choose.

6. The Endpoint Alias Type “Endpoint alias type for remote function call (RFC)” should be pre-selected.

7. From the available Endpoint Aliases select the one defining the endpoint as the SAP system that contains the required service.
8. Click **Test** to test the endpoint.

9. The information “Connection has been tested” indicates that the connection works.

10. Click **Choose**.
11. Click the **Choose** under “Service” to select the required service from the selected endpoint alias.

12. Enter the function name and click **Go** to request information from the endpoint (You can use an asterisk * for searching with wild cards).

13. Select the required function name from the result list and click **Choose**.
14. The message that the marked service has been selected is displayed.

15. Click Next.
16. Here Guided Procedures displays the list of input parameters available for the external service. Click **Next**.

17. Guided Procedures displays the list of output parameters for the external service. Click **Next**.

18. If you selected another function to call, a dialog may be displayed to define error handling. For testing purposes you might simply select “No error handling”. For further information on error handling please see document [3].

   Click **Next**.
19. Click Finish and Open.

20. You can now test the callable object by selecting the “Test” tab on the bottom pane.

21. Complete the input parameter and press execute.
22. The test result should be displayed as shown.

23. Click Activate (تان) to activate your callable object.