Trigger BRFPlus from Workflow and Trigger Workflow from BRFPlus

 Applies to:
 SAP R/3 ECC 6.0, SAP NetWeaver 7.0 Enhancement Package 1 and 7.1 EHP 1. For more information, visit the ABAP homepage.

Summary
 The purpose of this document is to illustrate the steps and explain with an example to show –

 1) Trigger BRF+ from Workflow
    a. Using Business Object Method option
    b. Using BRF+ Function option
 2) Trigger Workflow from BRF+

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# Table of Contents

Introduction .............................................................................................................................................. 3  
Audience .................................................................................................................................................. 3  
Purpose ................................................................................................................................................... 3  
  Limitations in Conventional approaches (apart from BRF+ Usage) ....................................................... 3  
Dependencies/Pre-requisites/Assumption ............................................................................................... 4  
Technical Process .................................................................................................................................... 4  
  Scenario Illustration .............................................................................................................................. 4  
  Trigger BRFPlus from Workflow .......................................................................................................... 5  
  Test BRFPlus triggering from Workflow ............................................................................................ 9  
  Trigger Workflow from BRFPlus ........................................................................................................ 11  
  Test Workflow triggering from BRFPlus ............................................................................................ 12  
Benefits ................................................................................................................................................... 14  
Conclusion ............................................................................................................................................... 14  
Related Content ...................................................................................................................................... 15  
Copyright ................................................................................................................................................ 16
Introduction

Business Rules Framework Plus (BRFPlus) is a Business rules System developed in ABAP. It provides a comprehensive application programming interface (API) and user interface (UI) for defining and processing business rules. BRFPlus supports features like simulation, trace, transport, XML export or import. Business Rulesets describe the operations, definitions and constraints that apply to an organization in achieving its goals. They enable an organization to achieve its goals by describing the operations, definitions and constraints. Business rules include basically everything that runs a business, for instance, business habits, manuals, policies, lines of computer code, and minds of experienced employees. Managing business rules, which are subject to frequent changes because of an agile environment, is the biggest challenge organizations face today. Hence, is the importance of BRF+ which is built on ABAP stack and has been effectively integrated with WebDynpro, ECC 6.0.

A similar functionality such as “Decision Tree” in HR Mini Master (PE03 transaction), “Validation and Substitution” in Finance module (OKC7 transaction), which gives flexibility through configuration. But limitation is this functionality is limited to specific modules.

Audience

ABAP Technical consultants - Business Rule Framework Basis, Workflow Basics

Purpose

Usage of Business Rule Framework Plus (BRF+), gives the flexibility to the update the rules without any need to integrate or modify the code and thereby directly deploy the changes.

The purpose of this document is to illustrate the steps and explain with an example to show –

1) Trigger BRF+ from Workflow
   a. Using Business Object Method option
   b. Using BRF+ Function option
2) Trigger Workflow from BRF+

Limitations in Conventional approaches (apart from BRF+ Usage) -

There are many alternatives to the usage of BRF+, however these approaches don’t give the flexibility and transparency to the end user. Most of the time, these approaches either involve coordination efforts between IT experts and business experts, or downtime in order to facilitate the code change, or costs in testing the new modified business rules.

1) Rules inside Database – Rules are often maintained as Routines, Procedures and Access sequence.
2) Rules inside Code – Rules are often incorporated in the code logic by using IF ENDFIF or CASE statements.
3) Rules in Documents – Rules are often stored in excel sheet, or word document; however this option requires special attention to ensure versioning, archiving and compliance.
Dependencies/Pre-requisites/Assumption

1) Basic understanding of Workflow, Object Oriented concepts and BRFPlus is required to understand the flow and usage.

Technical Process

For demonstration purpose, I have used below scenario –

1) BRF+ is triggered from workflow through an activity
2) Workflow is integrated with BRF+ through Ruleset

Scenario Illustration

1) Variable payout of an employee is calculated based on his Current salary and Grade
2) Below is a scenario in which implementation of BRF+ is useful. For different grade of employee, final payout is calculated based on different formula. Further, incase an employee is of grade E, workflow needs to be triggered to his manager intimating about the same.

<table>
<thead>
<tr>
<th>Grade/ Level of Employee</th>
<th>Variable Payout</th>
<th>Additional conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - C</td>
<td>Current salary * 2</td>
<td></td>
</tr>
<tr>
<td>D - F</td>
<td>Current salary * 3</td>
<td>If Current Grade of employee is “E”, workflow needs to be triggered from BRF+ to the manager intimating about the increased payout.</td>
</tr>
<tr>
<td>G – H</td>
<td>Current salary * 4</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Current Salary + 100</td>
<td></td>
</tr>
</tbody>
</table>

3) The above BRF+ function would be triggered from custom workflow. Possible scenarios are -

a. Employee submits his yearly performance from a business transaction, and based on his current grade the “Master” workflow gets triggered to calculate the variable payout for that particular employee.

b. Yearly batch program/ report is executed for all the employees which in turn triggers “Master” workflow for various approval process from managers. Before sending notifications to managers, variable payout of the employee needs to be calculated.

c. Custom code logic may trigger the “Master” workflow based on specific requirement.

4) The flow logic is as below –
5) BRFPlus Expression is used to calculate Variable Payout based on Grade of employee and his current salary. Different formulas are used for each Grade.

6) SubWorkflow gets triggered from BRFPlus expression when a specific condition is satisfied.

**Trigger BRFPlus from Workflow**

A simple example is taken to illustrate the BRFPlus triggering from Workflow scenario. As mentioned, this “Master” workflow can be triggered from report or business transaction or custom code logic. This document concentrates more on linkage of workflow with BRFPlus. Refer to links mentioned in Appendix for illustration on how workflow can be triggered from events/ custom code.
Include BRFPlus Function

a) In the Activity, we have option to create/ link Task.

![Image of BRFPlus Task creation](image)

You can directly call BRFPlus Function which is designed in BRFPlus Workbench.

Enter a task description in the task definition. You can click on the top row to access it directly. The task description is used, amongst other things, in the Business Workplace and in the work item display.

b) If "Include BRFPlus function" option is selected, provide same Function ID as the one available in BRFPlus Workbench. BRFPlus Application can have multiple functions and each function is identified by a unique ID.

![Image of BRFPlus Function selection](image)
c) This BRFPlus Function contains the BRFPlus expression designed as per requirement. Refer to links mentioned in Appendix for illustration on how expressions need to be created.

d) Binding is done at Workflow level to ensure correct data flow between Activity container and BRFPlus container.
You may navigate to BRFPlus workbench using the “BRFPlus” icon.

Create BRFPlus Task

a) Other option to link BRFPlus with workflow is to use RuleSet. This option can be used with “Create BRFPlus Task” option.

b) Mention the Ruleset value

c) Appropriate binding needs to be done between Workflow container and BRFPlus Task container.
Test BRFPlus triggering from Workflow

On executing the workflow directly, it inturn calls the BRFPlus expression.

1) If BRFPlus Function is directly executed, below is the output based on the condition (mentioned on page 3). For Grade A employees, the variable payout will be (“Current Salary” * 2)

![Process Diagram]

- **Grade**: Data Object
  - Value: A
- **Salary**: Data Object
  - Value: 1,000
- **Payout Value**: Formula
  - Value: 2,000

Result:
- Final Payout: 2,000
2) If Workflow is executed, we would validate that same output is calculated –

Transaction SWI1 would show all the tasks that got executed and also the container values.
Trigger Workflow from BRFPlus

1) Workflows can be triggered from BRFPlus using “RuleSet” type.

```
<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: Z_BRF_DEMO</td>
</tr>
<tr>
<td>Application: Z_BRF_DEMO</td>
</tr>
</tbody>
</table>
```

```
<table>
<thead>
<tr>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: RuleSet</td>
</tr>
</tbody>
</table>
```

2) Multiple Rules can be assigned to Ruleset.

```
<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: WPRULESET</td>
</tr>
<tr>
<td>Application: Z_BRF_DEMO</td>
</tr>
</tbody>
</table>
```

```
<table>
<thead>
<tr>
<th>Rules</th>
</tr>
</thead>
</table>
```

```
If
GRADE is equal to E
Then
(1) Perform Action Z_TRIO_WF
```

Binding between Workflow container and BRFPlus Rule container can be done at BRFPlus Workbench level.
Test Workflow triggering from BRFPlus

1) For illustration, we are directly executing the BRFPlus function. We are considering the scenario in which Employee is of Grade E, hence, "Sub" workflow would get triggered from BRFPlus.
2) Go to SWI1 transaction to check the activity steps and check in the Inbox for email notification.
Benefits

1) Using BRFPlus, we are segregating the business logic from code logic.

2) BRFPlus maintenance is easy for end user. New conditions can be added, existing conditions can be changed without much effort.

Conclusion

1) Workflow usually tends to have dynamic approval hierarchy. Usually, HR Mini Master or custom tables are used to implement such dynamic scenarios. BRFPlus gives flexibility across all the modules with least maintenance requirement.

2) Workflow and BRFPlus are coherently integrated in SAP NetWeaver 7.0 Enhancement Package 1 and 7.1 EHP 1.
Related Content

- Getting started in BRF+
- BRFPlus Integration
- About BRF and BRFPlus

For more information, visit the [ABAP homepage](http://www.sap.com).
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