EWM – Labor Management
How-to Guide: Structuring BRFplus content for multiple warehouse numbers

INTERNAL
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1 BUSINESS SCENARIO

1.1 Introduction
Labor Management provides you with a series of functions that help you to plan labor times and resources in your warehouse more effectively, thereby making your warehouse more productive. You use these functions to measure, plan, simulate, and visualize the activities in your warehouse. To do so, you can define rules in BRFplus.

This document offers an example of how to structure BRFplus content so that you can separate content by warehouse number. This structure enables the usage of BRFplus authorization objects so that you can ensure that only specified users are able to access warehouse-specific content in BRFplus. For example, you can ensure that a warehouse supervisor can only make changes to rules in BRFplus for their own warehouse.

2 BACKGROUND INFORMATION

2.1 Access Level of EWM Decision Services
EWM delivers content to BRFplus based on decision services that are assigned to BRFplus applications with the storage type System. This allows you to use decision services independent from the client and means the decision service is available in your (customer) systems without the need for importing client-specific Customizing.

To provide rules for the decision services provided by EWM, you need to create separate BRFplus applications as containers for artefacts such as rulesets, rules, decision tables, and formulas. Starting with a ruleset, you need to assign these artefacts to one decision service so that the rules are executed during runtime. To allow rulesets from your customer-specific application to be assigned to a decision service provided with a SAP EWM application, the visibility (access level) of the artefacts is already set as Superordinate Component. To use these decision services, you need to assign the application component SCM-EWM-LM to your customer-specific BRFplus application.

A consequence of this is that any users who are authorized to create or change rulesets can influence the result of a SAP EWM decision service by assigning the ruleset to the decision service (which is possible because the decision service is visible).

3 STEP-BY-STEP PROCEDURE FOR STRUCTURING BRFPLUS CONTENT

The following step-by-step description provides an example of how to structure BRFplus content on a warehouse number basis. In a second step, you can restrict the access to specific users by disabling any access (including display and change access) to content for a warehouse number for which no explicit authorization was granted. The result of this example is one customer-specific BRFplus application per warehouse number. Each application contains a copy of the decision services provided by SAP EWM with the exact same signature but where the access level is restricted to the application. You enter the copied decision services in the Customizing activity Assign BRFplus App. and Function to Decision Service Context, so that they are used for EWM Labor Management, e.g. for determining engineered labor standards. Finally, you can use the BRFplus authorization object FDT_OBJECT to limit the access to content at design time on application level. Due to the relation of one application per warehouse number, the user access can thus be restricted on warehouse number level.

3.1 Create Application
In the BRFplus workbench, create a new application. To limit the scope of the application content, set the access level to Application. Check the additional settings of the application and adapt them as required. For example, pick a storage type which corresponds to the business requirements and processes. The
application contains rulesets that are only assigned to functions within the same application. Therefore, you do not need to enter application component SCM–EWM–LM.

We recommend checking the default settings defined per application as they will later be considered by all artefacts within this application. For example, it is possible to turn on versioning as a default setting or to enable check messages so that fix value checks of domain-based input fields are performed.

3.2 Copy Decision Service
Depending on which of the available functionalities in Labor Management you are using, you need to copy a different amount of SAP EWM defined decision services. EWM provides multiple decision services which are used in various contexts of Labor Management. You can find lists of all the available decision services in the EWM Application Help at help.sap.com/ewm. Basically, these decision services are assigned to the following applications:

- /SCWM/LM_LA_SYS (Labor activity determination)
- /SCWM/TDC_SYS (Travel distance and travel time calculation)
- /SCWM/LM_ELS_SYS (Engineered labor standards)
- /SCWM/LM_FFD_SYS (Personal needs, fatigue and unavoidable delay factor)

Thus, an easy way to identify the decision services is to use the BRFplus workbench search and enter those application names. To copy the decision service, simply select Copy from the context menu of the function in the BRFplus repository and follow the wizard.

- We do not recommend including referenced objects, as only the decision service itself should be copied.
- During the wizard, pick the application created in step 3.1 as the target application.
- We also recommend renaming the decision service to reduce confusion, for example, a good practice is to use the warehouse number as part of the decision service name.

3.3 Assign the Copied Decision Service to the Context in EWM Customizing
In EWM Customizing, assign the decision services you copied in step 3.2 to the corresponding context per warehouse number. See the following path:

SCM Extended Warehouse Management -> Extended Warehouse Management -> Labor Management -> Assign BRFplus App. and Function to Decision Service Context

In this table, enter the name of the application created in step 3.1 and the name of the copied decision service created in step 3.2. Do this for each copied decision service. For each warehouse number, you can assign your copied decision service to the decision service provided by EWM.

3.4 Define Authorizations
You can use the authorization object FDT_OBJECT to limit the access per user to specific BRFplus objects like applications, rulesets, or expressions. Use this authorization object to grant access only to the application which contains the decision service for the warehouse number. To do this, assign the application to authorization field FDT_APPL. You can make further settings for the authorization objects based on your business needs. In addition, the same user needs read-only access to the application provided by EWM. This is required for accessing the contained data elements for modeling rules.

The generated authorization profile can then be used within a PFCG role. Each user that has been assigned this PFCG role is allowed to work with the defined application. Users without this role do not have sufficient
authorization to access the application. These checks apply for the design time of the rules and are not considered at runtime when labor management documents are created.

If you are using SAP Decision Service Management (DSM), you can use additional authorization objects, like DSM_M5, to restrict the access to managed systems; for example, to reduce the access for specific systems which contain specific warehouse numbers in cases where multiple EWM systems are in use and served by the same DSM system.

3.5 Provide Rules
You need to provide the business logic as rules in BRFplus. This final step is independent from structuring BRFplus content per warehouse number. You need to assign all rules to the decision services copied in step 2, because the Customizing settings of step 3.3 mean the copied decision services per context are called instead of the original EWM decision services.

4 EXAMPLE

Figure 1: Example schema for BRFplus content structure for two warehouse numbers

The diagram above shows an abstract example for BRFplus structured content for two different warehouse numbers, W001 and W002. The containers for all artefacts are BRFplus applications that you, the customer, create. Here they are named after the warehouse numbers: “W001” and “W002”. Each application contains as an example one customer-specific function, also named according to the warehouse number. The functions are copies of the functions predefined by EWM to ensure the signatures are identical. Each application also includes one ruleset, each containing some expressions such as a decision table and a formula. These rulesets are then assigned to the customer decision service (function) of the same application. As the access level of the applications is limited to Application, it is not possible for rules defined in the application W002 to register for a decision service in the application W001.

5 CONCLUSION

Using the example approach above, you can limit the access to rules for a specific warehouse number by structuring the BRFplus content accordingly. This structure results in one BRFplus application per warehouse number, each containing a different copy of the decision services predefined by EWM. All content for a warehouse-number-specific application is limited to be visible only within the same BRFplus application. This implies that only users who can access such a warehouse-number-specific application can influence the rules for a specific warehouse number. You can use the BRFplus authorization objects to restrict users for specific BRFplus applications. Finally, EWM provides a Customizing activity where you can define which decision service will be called at runtime depending on which warehouse number it is linked to.