

How to Check or Derive an Attribute Value in MDG using BRFPlus



Applies to:

SAP Master Data Governance, as of SAP Master Data Governance 6.1 (or lower).

Summary

With SAP Master Data Governance you can use BRFplus to define rules for checking attribute values or to derive them. This step-by-step guide shows you how to create such a rule. This procedure can be applied to any MDG application or data model. The MDG for Custom Objects Example Scenario is used as an easy to understand basis for this how to document.

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Author Bio



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Relevant Documentation

[SAP Master Data Governance 6.1 – SAP Help Portal Page](#) -> Application Help -> Configuration of Master Data Governance -> Configuring Master Data Governance for Custom Objects -> [Definition of Validations and Derivations](#)

For more comprehensive information, particularly on how to apply rules, checks and derivation to MDG for Material, see the MDG Extensibility Center (<http://scn.sap.com/docs/DOC-7858>)

Example Scenario

I assume that you followed this configuration description and have the scenario up and running in your system:

[SAP Master Data Governance 6.1 – SAP Help Portal Page](#) -> Application Help -> Configuration of Master Data Governance -> Configuring Master Data Governance for Custom Objects -> [Master Data Governance for Custom Objects: Example Scenario Conf](#) (at bottom of page)

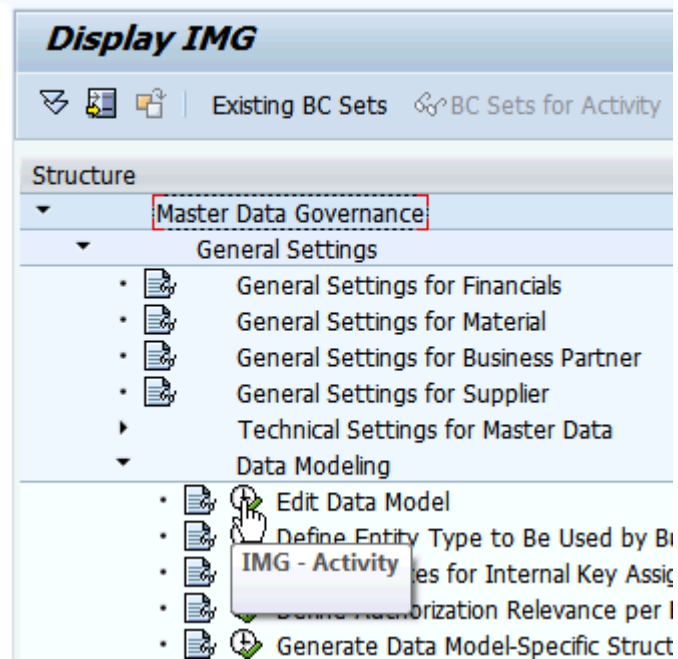
Objective

As an example the value of the *airline local currency* should be checked: It must not be DEM (Deutsche Mark) or GRD (Greek Drachma).

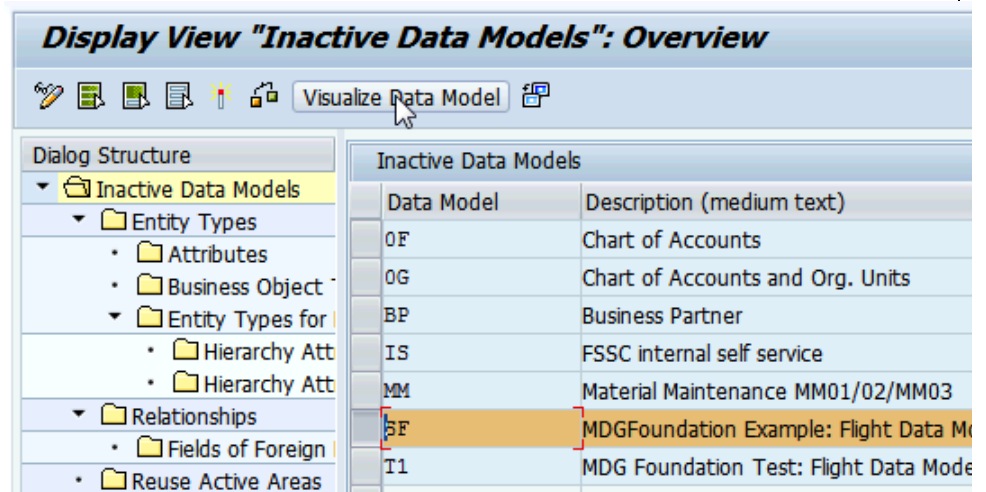
The screenshot displays the SAP Business Client interface. On the left, a navigation menu includes 'Change Requests', 'Process Airlines', 'Process Flight Connections', and 'Analyze Change Request Process'. The main content area shows the 'Change Requests' section with a list of services and their descriptions. Overlaid on this is a browser window titled 'Create Change Request: Airline ABC - Microsoft Internet Explorer'. The browser window shows a form for creating a change request. The 'Entity Type' is 'Airline'. The 'Change Request' dropdown is selected. The 'General Data' tab is active, showing fields for 'Description' (Create ABC Airlines), 'Priority', 'Due Date', and 'Reason'. The 'Main Data' tab is also visible, showing 'Airline: ABC Air' and 'Airline local currency'.

Step 1 – Identify name of attribute and name of entity type

Open IMG using transaction MDGIMG, select Edit Data Model.



Select the SF example data model, then Visualize Data Model.

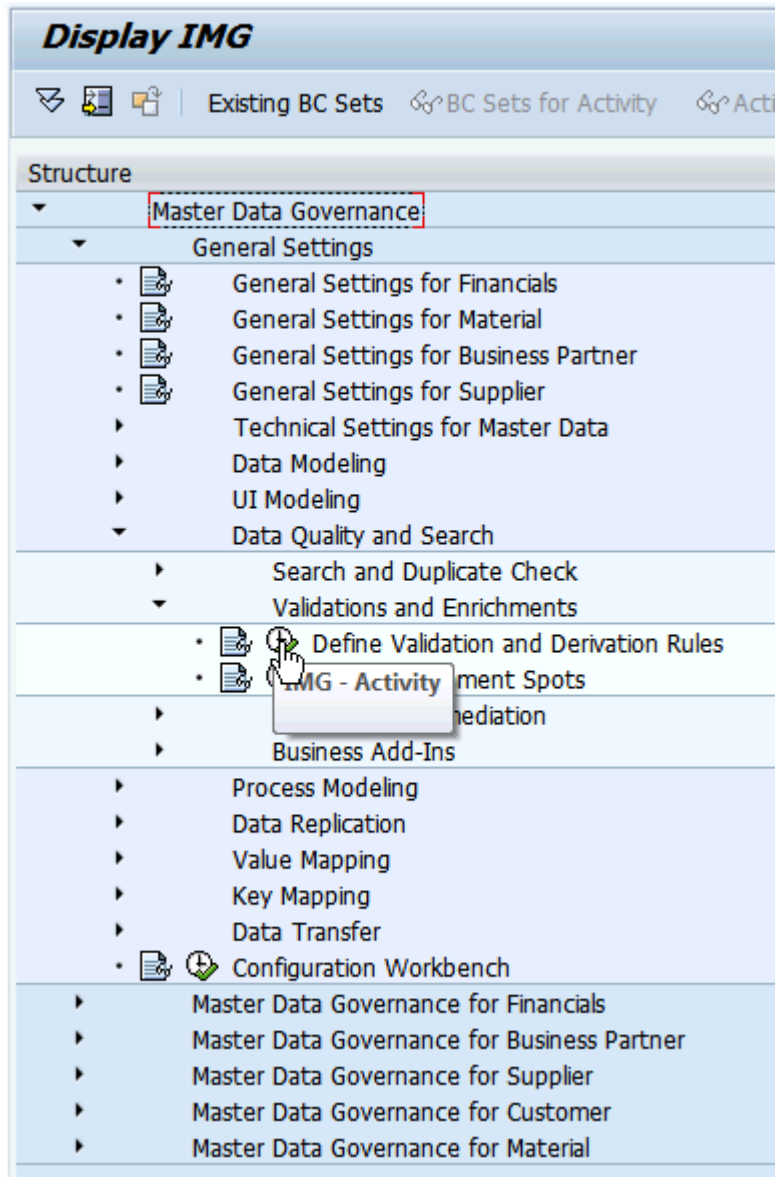


By examining the structure, you see that the attribute *Airline local currency* is technically named **CURRCODE** and belongs to the entity type **CARR**.

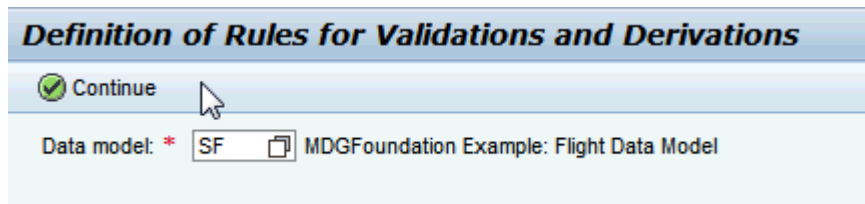
Inactive Data Model SF			
Detail View		Active Version	Graphic Display
Data Model	Name	Field Type	Data
▼ SF			
▼ PFLI	Flight Connection		
• PFLI	Connection Number	Entity Type Itself	S_CON
• CARR	Airline	Leading Entity Type	MDG_S
• AIRPFROM	Departure airport	Attribute	S_FROI
• AIRPTO	Destination airport	Attribute	S_TOA
• ARRTIME	Arrival Time	Attribute	S_ARR
• CITYFROM	Depart. city	Attribute	S_FROI
• CITYTO	Arrival city	Attribute	S_TOA
• COUNTRYFR	Country Key	Attribute	LAND1
• COUNTRYTO	Country Key	Attribute	LAND1
• DEPTIME	Departure time	Attribute	S_DEP
• DISTANCE	Distance	Attribute	S_DIST
• DISTID	Distance in	Attribute	S_DIST
• FLTIME	Flight time	Attribute	S_FLTI
• FLTYPE	Charter fit	Attribute	S_FLTI
• PERIOD	Arrival n day(s) later	Attribute	S_PERI
▶ FLIGHT	Flight (Scheduled Flight)		
▼ CARR_LINK	Ownership-Link Between Airlines		
• OWNED	Subsidiary Airline	Key Attribute	MDG_F
• OWNING	Parent Airline	Key Attribute	MDG_F
• AMOUNT	Amount (loc.curren	Attribute	S_L_CI
• CURRENCY	Airline local currency	Attribute	S_CURI
▼ CARR_HIER	Names for Hierarchies of Airlines		
• CARR_HIER	Airline Hierarchy	Entity Type Itself	MDG_S
• TXTMI	Description (medium text)	Attribute	USMD_
• TXTSH	Description (short text)	Attribute	USMD_
▼ CARR	Airline		
• CARR	Airline	Entity Type Itself	MDG_S
• CARRNAME	Name of Airline	Attribute	MDG_S
• CURRCODE	Airline local currency	Attribute	S_CURI
• URL	Airline URL	Attribute	S_CARI

Step 2 – Create BRFplus objects for check

Go back to the IMG again, and then select Define Validation and Derivation Rules.

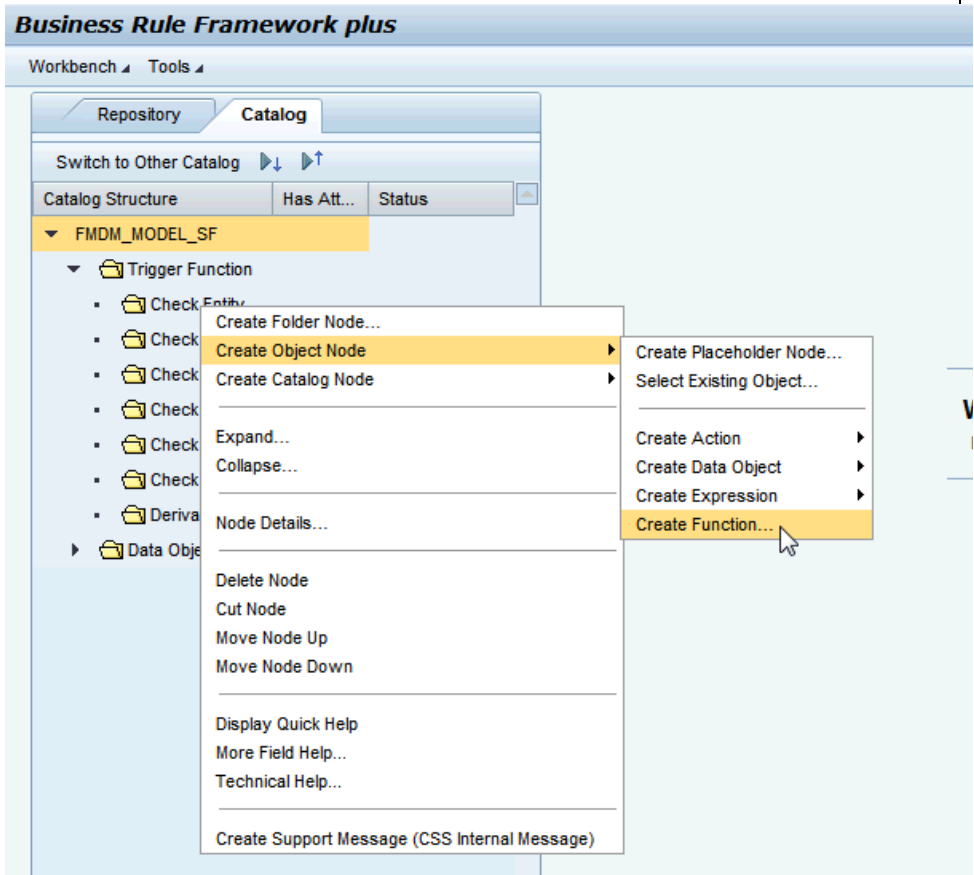


Enter SF as the id of the example data model, select Continue.



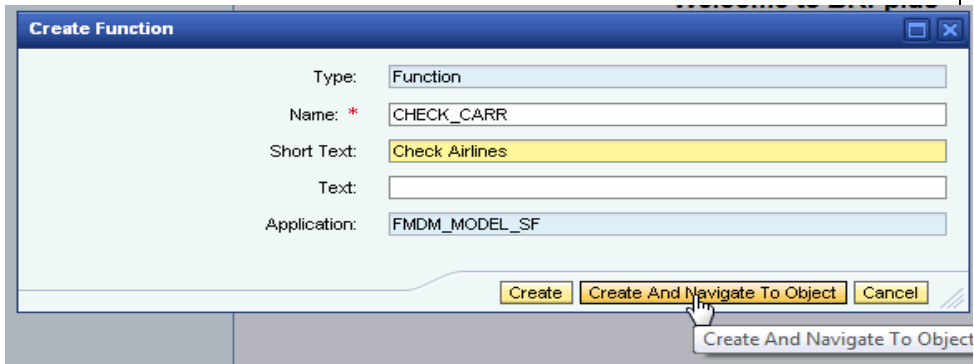
MDG provides you with a set of folders to organize the BRFplus objects. Be aware that the names of the folders do not influence the execution of the BRFplus functions. **Only the name of the function is important!**

Select the folder *Check Entity*, then from the context menu *Create Object Node* -> *Create Function*.

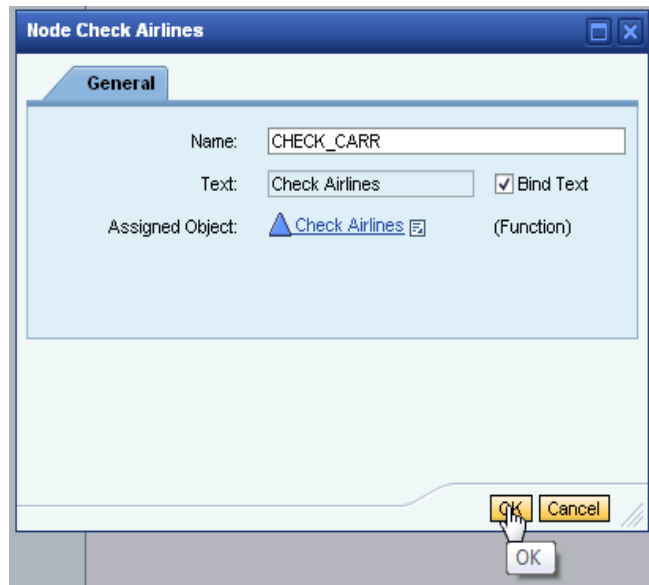


Name the function CHECK_CARR. It is important to choose this name, as it defines that this function will be called during the check cycle (CHECK) and for the entity type CARR.

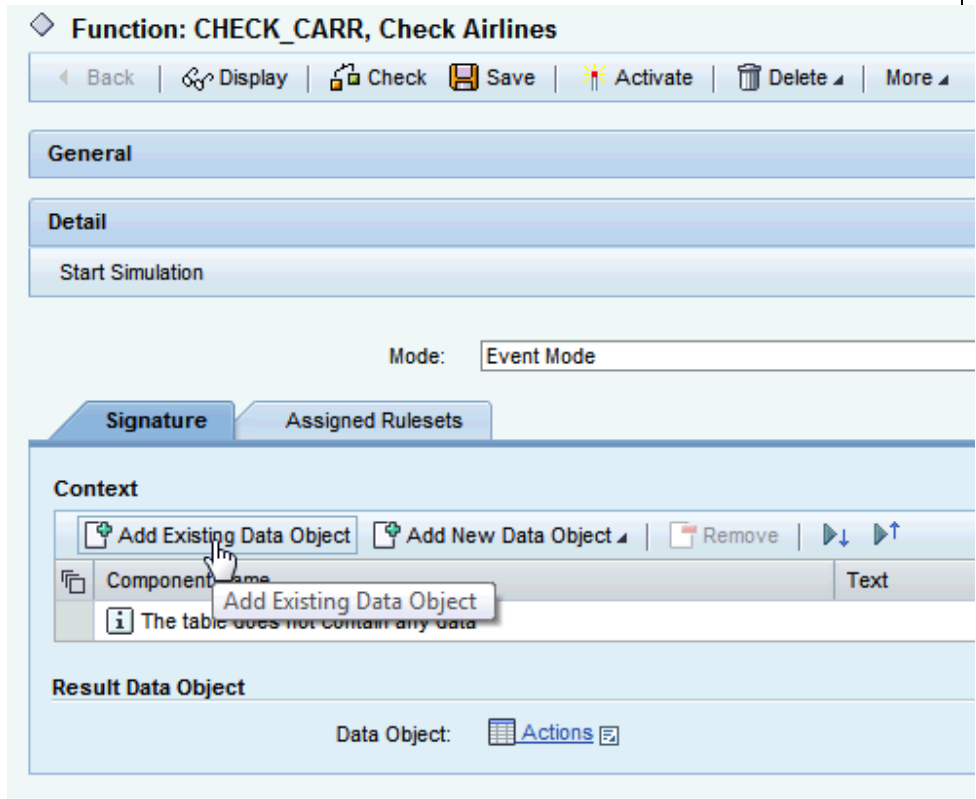
Select *Create and Navigate to Object*.



Confirm the name of the BRFplus catalog node.



First you need to define the context of the function. Select *Add Existing Data Object*.



Since we want to check entities of type CARR, select the corresponding entry.

IMPORTANT:

Even if you can add as many different data objects to the signature of the BRFPplus function as you want, it depends on MDG whether these objects will contain data during runtime or not.

For a CHECK_<ENTITY_TYPE> function, MDG will always provide the data of the respective entity type. For further information, please see the online documentation of [Definition of Validations and Derivations](#).

The screenshot shows the 'Object Query' interface. Under 'Search Criteria', the following filters are applied: Application Name is equal to FMDM_MODEL_SF, Data Object Type is equal to Any, Name is equal to *, and Text is equal to *. The 'Maximum Number of Results' is set to 200. The search results show 13 items found, with the first one, 'CARR', highlighted in yellow.

Object	Status	Type	Application
▶ CARR	■	Structure	FMDM_MODEL
▶ CARR_HIER	■	Structure	FMDM_MODEL
▶ Flight	■	Structure	FMDM_MODEL
▶ Ownership-Link	■	Structure	FMDM_MODEL
▶ PFLI	■	Structure	FMDM_MODEL
▪ Bus.Acty	■	Text	FMDM_MODEL
▪ Change	■	Text	FMDM_MODEL
▪ Edition	■	Text	FMDM_MODEL
▪ ID	■	Text	FMDM_MODEL
▪ Index	■	Text	FMDM_MODEL

Switch to tab *Assigned Rulesets*.

Function: CHECK_CARR, Check Airlines

Back | Display | Check | Save | Activate | Delete | More

General

General | **Texts** | Documentation

Source: Free text input

Dependency: Independent of language and version

Short Text: Check Airlines

Text:

Detail

Start Simulation

Mode: Event Mode

Signature | **Assigned Rulesets**

Context

Add Existing Data Object | Add New Data Object | Remove | Up | Down

Component Name	Text
» CARR	

Result Data Object

Data Object: Actions

Then select *Create Ruleset*.

Function: CHECK_CARR, Check Airlines

Back | Display | Check | Save | Activate | Delete | More

General

General | **Texts** | Documentation

Source: Free text input
 Dependency: Independent of language and version
 Short Text: Check Airlines
 Text:

Detail

Start Simulation

Mode: Event Mode

Signature | **Assigned Rulesets**

Ruleset

Create Ruleset

Name	Text	Priority	Enabled
There are no rulesets assigned			

Choose any name for the ruleset, select *Create and Navigate to Object*.

Create Ruleset

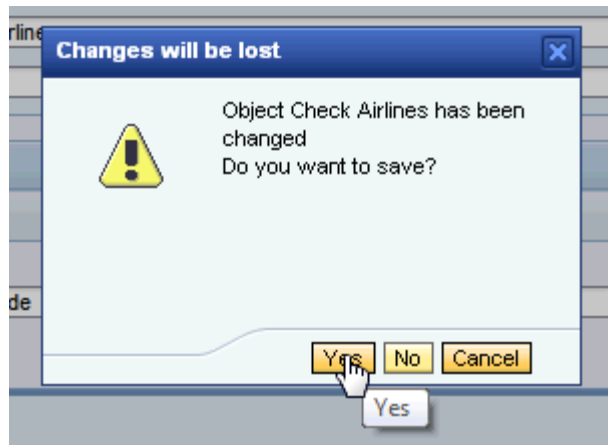
Type: Ruleset
 Name: * RS_CARR_CURRENCY
 Short Text: Check Airline Curr
 Text:
 Application: FMDM_MODEL_SF

Create | Create And Navigate To Object

s assigned

Create And

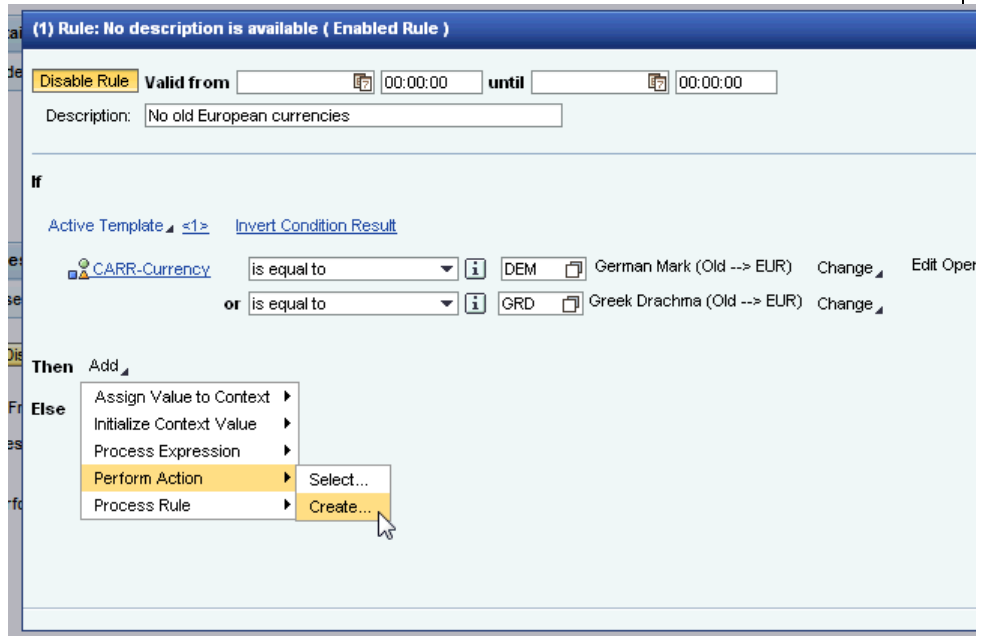
Confirm save.



For the new ruleset, create a new rule, by selecting *Insert Rule -> Create...*



Start defining the rule using the BRFplus editor by choosing the appropriate condition, then selecting *Add -> Perform Action -> Create...*



Select the type *Log Action* for the new action and choose any name, select *Create and Navigate to Object*.

Create Object

▼ **General data**

Type: Log Message (Action)

Name: * ACT_MSG_CURRENCY_OLD

Short Text: No valid currency

Text:

Application: FMDM_MODEL_SF

Is Reusable:

Buttons: Create, Create And Navigate To Object, Create And Nav

Confirm save.

Changes will be lost

Object Check Airline Curr has been changed
Do you want to save?

Buttons: Yes, No, Cancel

Enter a message text. Please note that you can use variables with the &n notation. As soon as you hit enter, BRFplus will allow you to choose the values for the variables.

Select *Activate*.

Also activate the ruleset.

Step 3 – See the check function working

Then verify the correct execution of the rule. Note that you need to re-start the Web Dynpro application.

Create Change Request: Airline ABC

[Submit](#) | [Close](#) | [Check](#) | [Save Draft](#) | [Duplicate Check](#)

! Former European national currency DEM is not allow ed.

Entity Type Airline

▼ Change Request

General Data
Notes
Attachments

Description: * <input style="width: 90%;" type="text" value="Create ABC Airlines"/>	Due Date: <input style="width: 80%;" type="text"/>
Priority: <input style="width: 80%;" type="text" value="▼"/>	Reason: <input style="width: 80%;" type="text"/>

Main Data
Attachments

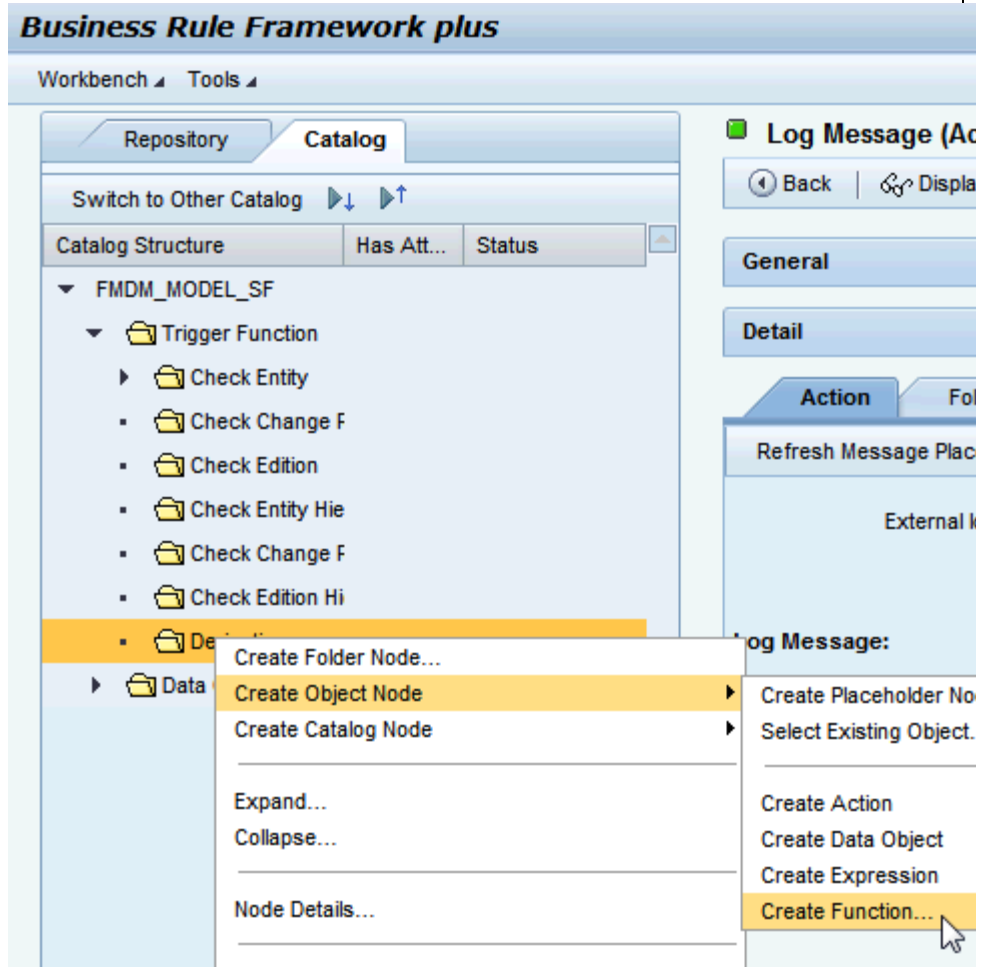
Airline Details

Airline: * <input style="width: 90%;" type="text" value="ABC Air"/>
Airline URL: <input style="width: 90%;" type="text"/>
Airline local currency: <input style="width: 80%;" type="text" value="DEM"/> <input style="width: 20px; height: 15px; border: 1px solid #ccc;" type="button" value="📄"/>

Step 4 – Create a derivation rule with BRFplus

In a similar way, you can also define rules for deriving attribute values.

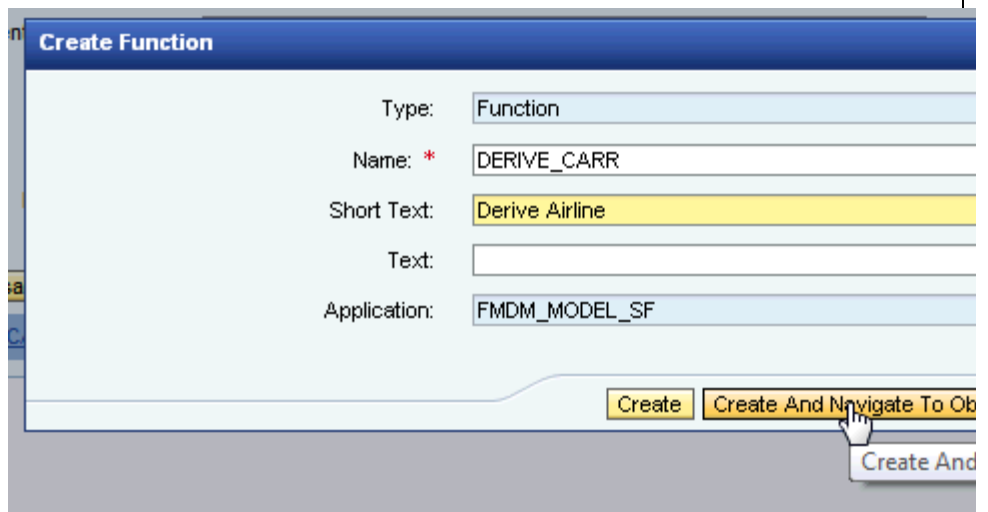
For that, create a new function below the Derive Entity folder.



As for the check function, only the name of the derivation function is important, not the folders where you locate the catalog object.

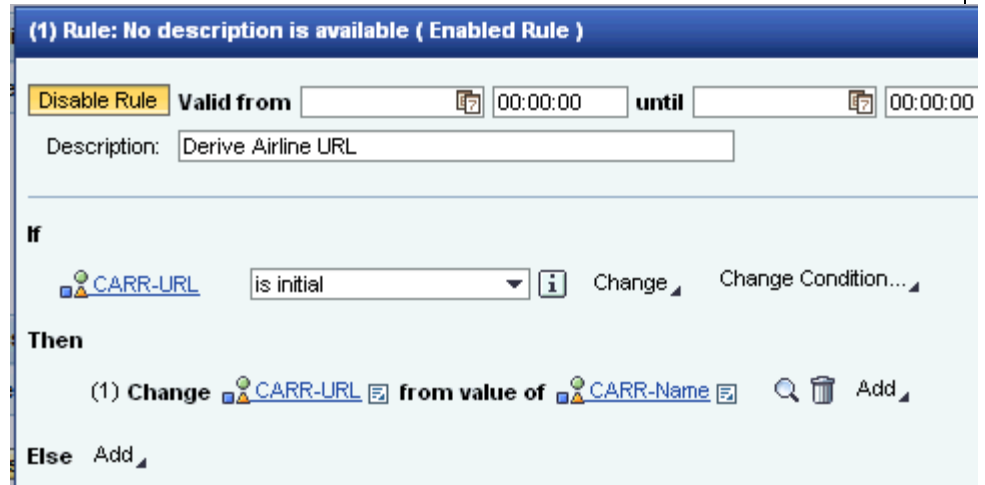
Let's define a function to derive the value of attribute **URL** of entity type **CARR** by naming the function **DERIVE_CARR**.

DERIVE indicates that the function will be called by MDG during the derive cycle, **CARR** that it will be called for entities of type CARR.



Proceed as in the example for the check function. At the point where you define the rule, do this as shown on the screenshot.

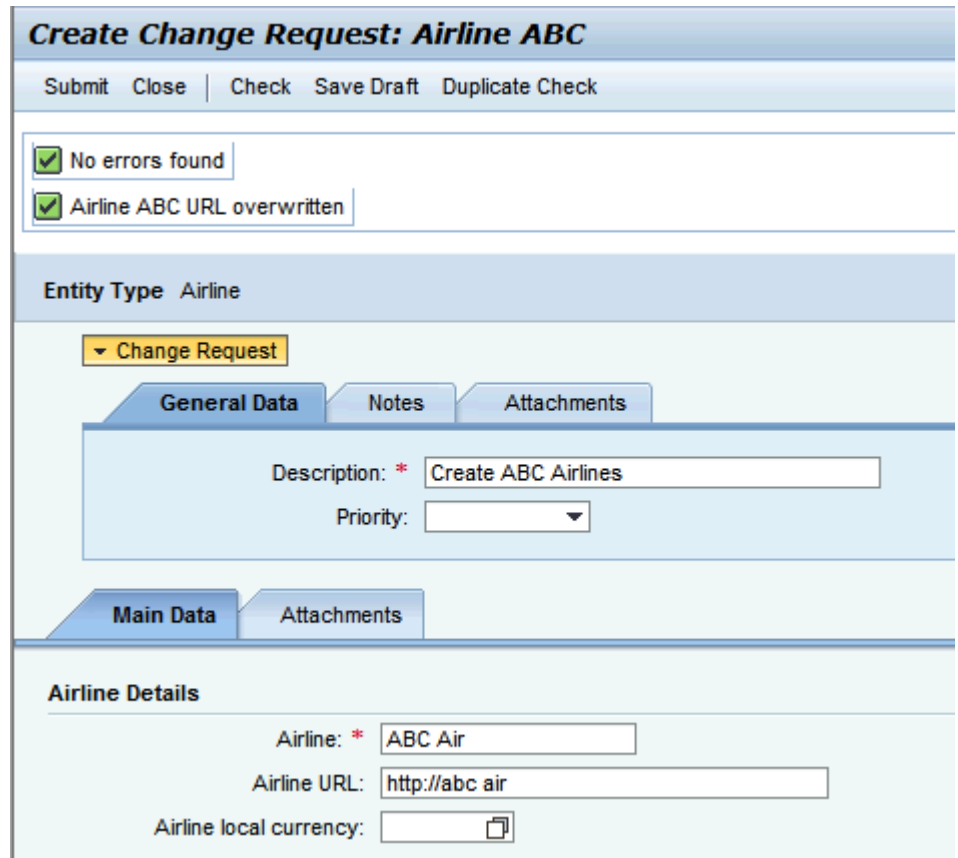
As the condition use CARR-URL is initial, and in the Then part, assign the value of CARR-Name to CARR-Url.
(Stupid, but simple example ;-)



After having activated ruleset and function, you can check the result by launching Create Airline again.

When you leave the attribute Airline URL empty and press Check, the BRFplus function DERIVE_CARR will be triggered and the attribute Airline URL will be filled with the name of the airline.

Because the access class of the example scenario also includes some check and derivation logic, this value will be converted to lower case and be prefixed with http:// .



Step 5 – Hint for troubleshooting

When starting to work with BRFPplus rules in MDG, it is a good idea to include a ruleset for debugging purposes in order to see whether the rule is actually triggered and to check values within the BRFPplus context.

Function: DERIVE_CARR

Back | Display | Check | Save | Activate | Delete | More

General

Detail

Start Simulation

Mode: Event Mode

Signature | **Assigned Rulesets** | Code Generation

Ruleset

Name	Text	Priority	Enabled	Precondition
RS_DEBUG_INFO	RS_DEBUG_INFO	[undefined]	Yes	
RS_DERIVE_CARR	RS_DERIVE_CARR	[undefined]	Yes	

You can easily switch it on or off using the *Enabled* flag.

Ruleset: RS_DEBUG_INFO

Back | Display | Check | Save | Activate | Delete | More

General

Detail

Hide Ruleset Header | Variables | Context Overview

Enabled: Number of Rules:

Function: DERIVE_CARR Number of Variables:

Precondition: <Not assigned> Priority:

Rules

Insert Rule | Insert Exit Condition

Disable Rule (1) Rule: Debug Info - Unlimited Validity

(1) Perform Debug info

Back |
 Display |
 Check |
 Save |
 Activate |
 Delete ▾ |
 More ▾

General

Detail

Action
Followup Actions

Refresh Message Placeholders
Context Overview
Start Simulation

External Identification Mo... None

Log Message:

(1) **Information Message:** Name: (CARR-Name) Curr: (CARR-Currency) URL: (CARR-URL)

Use Predefined Message

Text: Name: &1 Curr: &2 URL: &3

Ty

Variable 1 (&1): [CARR-Name](#)

Variable 2 (&2): [CARR-Currency](#)

Variable 3 (&3): [CARR-URL](#)

Related Content

[Extensibility Options for SAP Master Data Governance](#)

[SAP Master Data Governance Community on SCN](#)

[How-to guide - Overview of the checks which are used in MDG-M with examples for checks and derivations built in BRFplus](#)

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