Build Rule to Determine Equipment for New Hire

Using SAP Cloud Platform Business Rules

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# Initial Setup

## Setting Permissions

| **Explanation** | **Screenshot** |
| --- | --- |
| Rules Run-time RuleSuperUser role   * Logon to your account in the SAP Cloud Platform Cockpit and navigate to ***Services*** * Search for rules and select the ***Business Rules*** tile. * Choose the **Configure** **Business Rules Runtime** link. |  |
| * Navigate to **Roles** and assign your user to the ***RulesSuperUser*** role.   Now you have the necessary permissions to run the rules. |  |
| **Rules Repository RuleSuperUser Role**   * Return to ***Service: Business Rules – Overview.*** * Choose the ***Configure Business Rules Repository*** link. * Navigate to **Roles** and assign your user to the ***RulesSuperUser*** role.   Now you have the necessary permissions to deploy the rules. |  |

## Accessing Web-based Rules Editor from SAP Cloud Platform Cockpit

| **Explanation** | **Screenshot** |
| --- | --- |
| Finding rules editor web-tool link from SAP Cloud Platform cockpit   * Logon to your account in the SAP Cloud Platform Cockpit and navigate to ***Services*** * Search for rules and select the ***Business Rules*** tile * Choose the Business Rules Editor link |  |

| **Explanation** | **Screenshot** |
| --- | --- |
| Create Business RulesCreate Rules Project   1. Open web-based rules editor determined earlier and login to the same. 2. In *Manage Projects* screen, click on button 3. In the *New Project* screen, enter the details of the project:   **Name:** ‘OnBoarding’  **Description:** Business Rule Project for SFSF Employee Onboarding Scenario   1. **Save** the project   Note: Description is mandatory. It should be plain-text with letters and numbers, with no special character. |  |
| Create New Data Object  1. In your project screen, Click on the **DATA OBJECTS** tab 2. Click **Edit** button on the top-right corner of the screen 3. Click on the  button 4. In the Data Object screen, enter the details as follows:   **Name:** EquipmentInfo **Description:** Equipment Information   1. Switch to **ATTRIBUTES** tab 2. Use  to add new attributes and enter the following details:  |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Type** | | Currency | Currency | String | | ProductID | Product ID | String | | EquipmentType | Type of Equipment | String | | Price | Product Price | Number | | ProdDesc | Product Description | String |      1. Select an attribute row   It will navigate you to another screen to modify the selected attribute   1. Switch to **ATTRIBUTE MAPPINGS** 2. In *Target Runtime* section, click on the  button 3. Select **JAVA** as Target Runtime and **Cloud** as Target Runtime Variant 4. Go back to the *EquipmentInfo* data object by clicking on the **EquipmentInfo** breadcrumb link on the top-left corner of the screen 5. Repeat the steps 11 – 15 to set the Target Runtime for all the remaining attributes of the equipment   Note: Setting Target Runtime is a mandatory step.  Information: ***EquipmentInfo*** data object is the output data object that will be used for actions in the decision table   1. Once you have defined all the attributes and set the attribute mappings, click on ***Mappings*** under the ***EquipmentInfo*** data object 2. In *Target Runtime* section, click on the  button 3. Select **JAVA** as Target Runtime and **Cloud** as Target Runtime Variant 4. **Activate** to activate the data object.   Note: Activate internally will save, validate and activate the data object. You can separately also click on Save and Validate buttons to save and validate the data object respectively   1. Once the data object is activated successfully, note that the status of the object changes to *Active* |  |
| 1. Navigate back to the rules project to create another Data Object 2. Repeat the steps from 5 – 20 to create a new data object with following details   In **Details** Section  **Name:** Employee  **Description:** Details of Employee  In **ATTRIBUTES** section   |  |  |  | | --- | --- | --- | | **Name** | **Description** | **Type** | | jobTitle | Job title of recruit | String | | company | Company Name | String | | countryOfCompany | Country of Company | String | | isFullTimeEmployee | Is full time employee | Boolean |   In **MAPPINGS** section  **Target Runtime:** JAVA  **Target Runtime Variant:** Cloud  Finally **Activate** the data object   1. Navigate back to the rules project   You will see two data objects created and activated |  |
| Create New Rule  1. Switch to **RULES** tab 2. Click on  button to add a new decision table 3. In the New Rule screen, select the DETAILS section and enter the following:   **Name:** DetermineEquipment  **Description:** Rule to determine equipment for the new hire based on the country and job title of the new hire.  **Hit Policy:** All Match   1. Switch to **DECISION TABLE** tab and click on *Table Settings* icon 2. In the Table Settings popup, enter the following for the first condition column:   **Column:** countryOfCompany  **Fixed Operator:** None   1. Click on the  button, as shown, to add the following condition columns in the similar way   Enter the following details:   |  |  | | --- | --- | | **Column of Decision Table** | **Fixed Operator** | | company of the Employee | None | | jobTitle of the Employee | None | | Employee is isFullTimeEmployee | None |  1. Click on **Apply** button   Decision table gets created with the four selected columns as the condition column.   1. Switch to **DETAILS** section 2. Select *EquipmentInfo* as the *Result Data Object* 3. Click *Ok* on any subsequent dialog(s) and you’ll see a message of *Result Data Object being changed* 4. Switch to **DECISION TABLE** tab 5. Click **Edit** on the top-right corner of the screen 6. In the row, enter the rules one after the other.   **countryOfCompany of the Employee:**  is equal to 'USA'  **company of the Employee:**  is equal to 'ACE\_USA'  **jobTitle of the Employee:**  is like '%'  **Employee is isFullTimeEmployee:**  is equal to true or Employee is isFullTimeEmployee is equal to false  **ProdDesc:** 'Lovely Sound 5.1'  **Price:** 35.96  **EquipmentType:**  'Audio and Video'  **ProductID:** 'HT-1096'  **Currency:** 'EUR'  [Note: All the strings must be entered with single-quote. Kindly write this from scratch in the Rules Editor to avoid formatting issues]   1. Select the newly created row (check box) and click **Add Row** 🡪 **Insert After**, to insert a new row after the selected row. Refer to Appendix: Determine Equipment Rules to get all rules (or model as required for your usecase) 2. **Activate** the decision table   Note the status of the decision table to be **Active** if the decision table gets activated successfully.   1. Switch back to the rules project 2. You will see the decision table rule created and activated  Create Rules Service  1. Switch to **RULES SERVICES** tab      1. Click on the **Edit** button on the top-right corner of the screen      1. Click on the  button to add a new rules service      1. Enter the following details:   **Name:** DetermineEquipment  **Description:** Service to determine equipment for the new hire   1. Switch to **EXECUTION CONTEXT** tab 2. Click on the  button twice to add two new rows      1. Select the following:  |  |  | | --- | --- | | **Name** | **Usage** | | Employee | Input | | EquipmentInfo | Result |  1. Switch to **TARGET RUNTIME** tab 2. Click on  button 3. Select the following:  |  |  | | --- | --- | | **Target Runtime** | **Target Runtime Variant** | | JAVA | Cloud |  1. Click on **Activate** button to activate the rule service   Note the status of the rules service to be **Active** if the service gets activated successfully.   1. Switch back to the rules project. You will see the rule service is created and activated | C:\Users\i054781\AppData\Local\Temp\SNAGHTML15bf286.PNG |
| Create Ruleset  1. Switch to **RULESETS** tab to add a new ruleset 2. Click on the **Edit** button on the top-right corner of the screen   Note: Ruleset will define the execution sequence of the rule. You can add multiple rules in the ruleset and the execution order will be the order in which they are added. Note that the rules of same ruleset must have the same Output result data object. The result set will be the union of each rule execution in form of array   1. In the *New ruleset* screen, click on the **DETAILS** tab 2. Enter the following details:   **Name:** DetermineEquipment  **Description:** Rule set that contain the rules needed to determine the equipment required for a new hire  **Rule Service:** DetermineEquipment   1. Switch to **RULES** tab 2. Click on  button 3. Select the ***‘DetermineEquipment’*** rule from the drop down 4. Activate the ruleset by clicking on the **Activate** button on top-right corner of the screen   Note the status of the ruleset changes to **Active** if the ruleset gets activated successfully.   1. Switch back to the rules project 2. Switch to **DETAILS** tab 3. Click on **Activate** button 4. Your rules project gets activated and the status gets changed to **Active** |  |
| Deploy Rule Service  1. Switch to **RULES SERVICES** tab 2. Select the rules service ***‘DetermineEquipment’*** 3. Click on **Deploy** button   Note: Ensure that your rule, ruleset and all data objects are Active before you deploy  Note: Ensure that your rule service is in Active state before you deploy  Note: Ensure that the rule service is associated with at least one ruleset   1. Once deployed successfully, you will see a message stating **“*Rule service deployed successfully “*** |  |

# Appendix

## Determine Equipment Rules to get all rules

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **IF** | | | | **THEN** | | | | |
| **countryOfCompany of the Employee** | **company of the Employee** | **jobTitle of the Employee** | **Employee is isFullTimeEmployee** | **Price** | **ProdDesc** | **EquipmentType** | **ProductID** | **Currency** |
| is equal to 'USA' | is equal to 'ACE\_USA' | is like '%' | is equal to true or Employee is isFullTimeEmployee is equal to false | 35.96 | 'Lovely Sound 5.1' | 'Audio and Video' | 'HT-1096' | 'EUR' |
| is equal to 'USA' | is like '%' | is like '%' | is equal to true or Employee is isFullTimeEmployee is equal to false | 956.00 | 'Notebook Basic 15' | 'Notebook' | 'HT-1000' | 'EUR' |
| is equal to 'GBR' | is equal to '2000' | is like '%' | is equal to true or Employee is isFullTimeEmployee is equal to false | 6.90 | 'Notebook Lock' | 'Cables and Accessories' | 'HT-1119' | 'EUR' |
| is equal to 'GBR' | is equal to '2000' | is equal to 'Development' | is equal to true | 1,999.00 | 'Notebook Professional 17' | 'Notebook' | 'HT-1010' | 'EUR' |
| is equal to 'GBR' | is equal to '2000' | is equal to 'Engineer II' | is equal to true | 35.92 | 'Lovely Sound 5.1' | 'Audio and Video' | 'HT-1096' | 'EUR' |
| is equal to 'GBR' | is equal to '2000' | is equal to 'Engineer II' | is equal to true or Employee is isFullTimeEmployee is equal to false | 989.00 | 'Astro Laptop 2017' | 'Notebook' | 'HT-1251' | 'EUR' |

## Miscellaneous

The information below is an extra read if you are interested in know-how to get the URLs and how to make sure the user has the necessary roles etc. As a pre-requisite, administrative rights on the SAP Cloud Platform Cockpit is needed.

### Finding the Rules Runtime URL

You need to use the Runtime REST APIs. For this, you need the SAP Cloud Platform Business Rules Service runtime URL.

| **Explanation** | **Screenshot** |
| --- | --- |
| **Finding rules runtime link from SAP Cloud Platform cockpit**  Login to your account in the SAP Cloud Platform cockpit and navigate to ***Connectivity*** |  |
| From the **Destinations** table, under the **Basic Properties** column, copy the **URL** link for runtime in the destination name **bpmrulesruntime**. |  |
| The URL to execute the business rule created in this document would be as shown on the right.  Here rule\_service\_name is OnBoarding::DetermineEquipment as per the project name and rules service name. | https://<bpmruntimeURL>/rules-service/v1/rules/invoke?rule\_service\_name=OnBoarding::DetermineEquipment |
| Create a SAP Cloud Platform Destination with the name **RULES\_SERVICE** and the URL as was  https://<bpmruntimeURL>/rules-service/v1/rules |  |