# Business Rules Engine Implementation

BRE consists of a real-time rules engine that gets invoked by the flow associated with an entry point. Typically the ANI of the incoming call along with other information associated with the call (such as an account number) are used by the rules engine to assess whether any special handling is needed for that call. This rules engine typically consults with a data repository to assess the desired call handling. The BRE configuration requires:

- Create a Set of Rules, on page 1
- Configure a BRE DataSync Instance, on page 4
- Create the Call Control Script, on page 6

Create a Set of Rules

The Business Rule Engine utility is invoked by the control script when a new voice request is presented to the ACD. This section explains how rules can be set up so that the BRE utility can assist the ACD to route the incoming request.

Call Control Scripts   Cisco BRE   BRE Repository
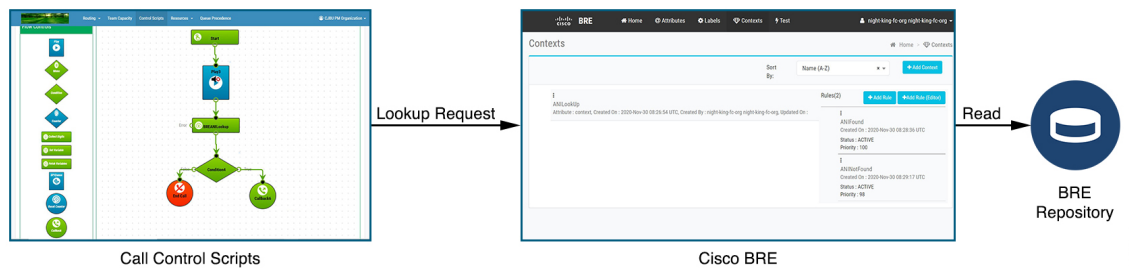
The BRE requires that there must be an incoming decision request for the BRE to be associated with a domain and a set of rules. The BRE tries to match the highest priority rule with the decision request based on conditions in the rules.

Be sure to create a rule set to cover all cases. For example, you should create rules for both *Match Found* and *Match Not Found* conditions. Or you could set up rules for multiple conditions. For example, *ANI Match* or *ANI No Match*, then *Gold* or *Silver*. In this case, you must create a rule for each possibility. For example:

- ANI Match and Gold

- ANI Match and Silver

- ANI No Match and Gold

- ANI No Match and Silver

To create a set of rules:

Procedure

Step 1 Log in to the Cisco Webex Contact Center Management Portal.

Step 2 From the Webex Contact Center Management Portal navigation bar, click **Business Rules** to launch the Business Rules Engine utility.

BRE uses Common Identity and a Single Sign-On interaction. If the tenants have already logged in to Cisco Webex Contact Center Management Portal, they will automatically gain access to the BRE utility for their organization.

Step 3 Create an attribute to associate with your organization:

a) Select **Attributes** and click **Add** on the **Attributes** page.

b) On the **Attributes** page, enter `context` in the **Name** field.

c) From the **Data Type** drop-down list, select **Text**.

The data type has to be `Text` in the BRE utility.

d) Click **Save**.

Step 4 Select **Contexts** to display the **Contexts** page.

a) Enter **Name** and an optional **Description**.

b) If more than one attribute has been created, select the attribute that you want to associate with this context from the **Attribute** drop-down list.

c) Click **Save**.

Step 5 To create rules, select the **Contexts** page.

a) (Optional) Click **Add Rule** section of the page. Specify the settings that are described in the following table:

Field	Description
Name	The name of the rule.
Description	An optional description of the rule.
Active	Select the check box to specify that the rule is active.
Priority	Drag the slider to assign a priority to the rule. The rules will be executed based on the assigned priority, from highest (100) to lowest. It is recommended that you start assigning priorities from 100 in the descending order.
Conditions	Specify the conditions from the drop-down list and select the attributes and values.

b) (Optional) Click **Add Rule (Editor)** section of the page. Specify the settings that are described in the following table:

Field	Description
Name	The name of the rule.
Description	An optional description of the rule.
Active	Select the check box to specify that the rule is active.
Priority	Drag the slider to assign a priority to the rule. The rules will be executed based on the assigned priority, from highest (100) to lowest.
Conditions	Select the conditions from the drop-down list and specify the attributes and values.
Rule Editor	Enter the rule.

c) Click **Save**.

Example

The following example returns the value for an attribute named *routeInfo* if the number that the caller dialed from (ANI) matches the ANI on the list of tenants that are uploaded to the BRE database. Copy and paste the following rule in the Rule Editor:

```
when
    c: Contact()
    eval(c.getGlobalValuesManager().getAsString( c.getTenantId(),
        c.getAttribute("context")+"."+
        c.getAttribute("ani")) != null)
then
    c.putAttribute("routeInfo",
    c.getGlobalValuesManager().getAsString(c.getTenantId(),
    c.getAttribute("context")+"." + c.getAttribute("ani")));
end
```

Example The following example code returns the value *NotFound* for the attribute *routeInfo*, if a number that the caller dialed from (ANI) did not match an ANI on the list of tenants that are uploaded to the BRE database. Copy and paste the following rule in the Rule Editor:

```
when
    c: Contact()
    eval(c.getGlobalValuesManager().getAsString( c.getTenantId(),
    c.getAttribute("context")+"." + c.getAttribute("ani")) == null)
then
    c.putAttribute("routeInfo", "NotFound ");
end
```
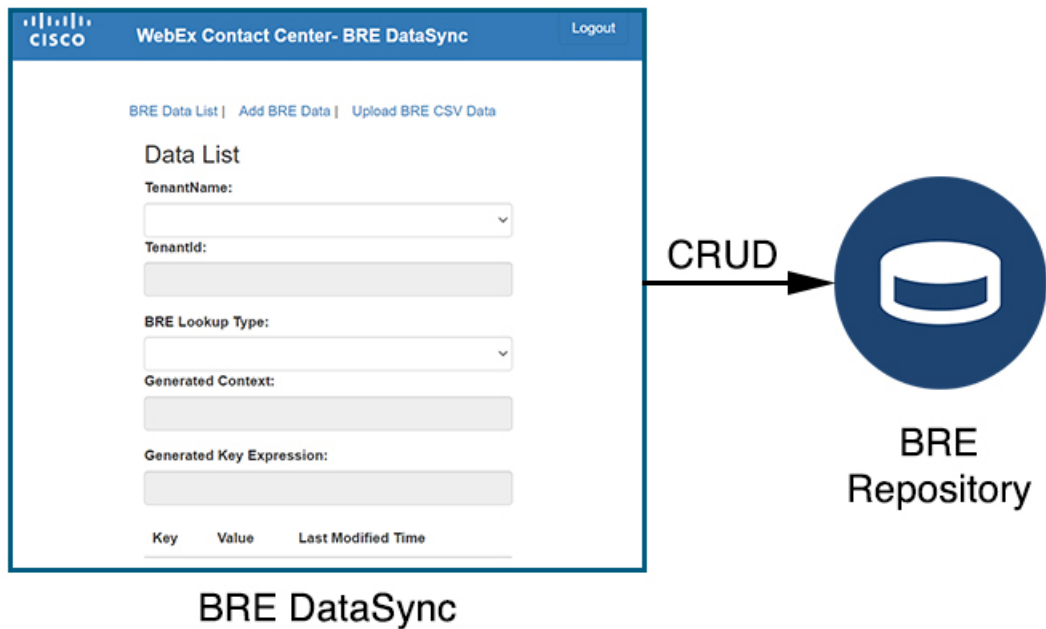

Configure a BRE DataSync Instance

The BRE DataSync accesses a database to make routing decisions. You must periodically update the database with the appropriate information. This section describes how the BRE DataSync utility can be configured to update the BRE repository.

Figure 1: BRE DataSync Utility

The tenant administrator must create a BRE DataSync instance for every data set that the Rules Engine will be consulting during its decision-making process. The administrator can create the data set or upload a CSV file. The data is converted into records in the BRE repository.

Note   Agents do not have access to the BRE DataSync utility.

Before you begin

Contact Cisco Customer Service Account Manager to get access to the BRE DataSync account.

Procedure

Step 1   As an administrator, log in to the BRE DataSync utility.

The BRE DataSync utility URL is: https://rules.cjp.cisco.com/datasync/index.html.

The region specific BRE DataSync URLs are:

https://rules.wxcc-eu1.cisco.com/datasync/index.html

https://rules.wxcc-eu2.cisco.com/datasync/index.html

https://rules.wxcc-anz1.cisco.com/datasync/index.html

https://rules.wxcc-ca1.cisco.com/datasync/index.html

Step 2   Select **BRE Data List** to view all the information that is related to the tenant organization.

Step 3   (Optional) Select **Add BRE Data** to add data to the BRE repository.

    a) Select the organization name from the **TenantName** drop-down list.

    b) Select the **BRE Lookup Type** from the drop-down list.

    c) Click **Add Data** to enter the **Key** and **Value**.

    d) (Optional) Click **Remove** to delete an existing **Key** and **Value**.

    e) Click **Submit**.

Step 4   Select **Upload BRE CSV Data** to upload the CSV file.

    a) Select the organization name from the **TenantName** drop-down list.

    b) Select the **BRE Lookup Type** from the drop-down list.

    c) Select **Upload** to browse and upload the CSV file.

    d) Click **Submit**.

Figure 2: Sample CSV File with Data

ANI	Extension	Action
972516001	6001	Delete
972516002	6002	Update
972555999	5999	Add

The actions Delete, Update, and Add are not case sensitive. You can also use the syntax `725160001,,Delete` to delete the data.

Create the Call Control Script

You can create a call flow using the call control script interface available in the Webex Contact Center Management Portal only for a BRE implementation.

Before you begin

To create a call control script that interacts with the BRE, you will need the following information:

- Name of the attribute associated with your organization. For example, context.

- The URL to use in the call flow for executing the BRE request. This URL is provided by the Cisco Customer Service Account Manager.

- The TenantId provided by the Cisco Customer Service Account Manager during BRE DataSync account creation.

Procedure

Step 1   Log in to the Webex Contact Center Management Portal as an administrator.

Step 2   Navigate to **Routing Strategy > Control Scripts**.

The call control scripts editor is displayed.

Step 3   Click **+New** on the **Control Scripts** page.

A new call control script is created for BRE. For more information about creating a call control script, see *Creating Call Control Scripts* in the Cisco Webex Contact Center 1.0 Setup and Administration Guide.

Step 4   In the **Control Scripts** page, drag and drop the [Fetch Variables] icon in the editor.

Step 5   In the **Control Scripts** page, double-click the [Fetch Variables] icon to edit the values for BRE.

Edit **Fetch Variables** with the following parameters:

Parameter	Value
Request URL	Enter the URL that was provided by Cisco Customer Service Account Manager for executing the BRE request.
Connector	It is not required to specify the connector.
Request Variables	Select the names of the CAD variables to be sent on the request. The tenantId is provided by Cisco Customer Service Account Manager. For example, see Figure 3: BRE Fetch Variables Values , on page 7.
Response Variables	Add the name of the variable that will hold the data that is returned by the BRE, as defined in the rule. For example, you would add a variable *routeInfo* for the rule that is illustrated in routeInfo.

Refer to the following image to edit the values:

Figure 3: BRE Fetch Variables Values
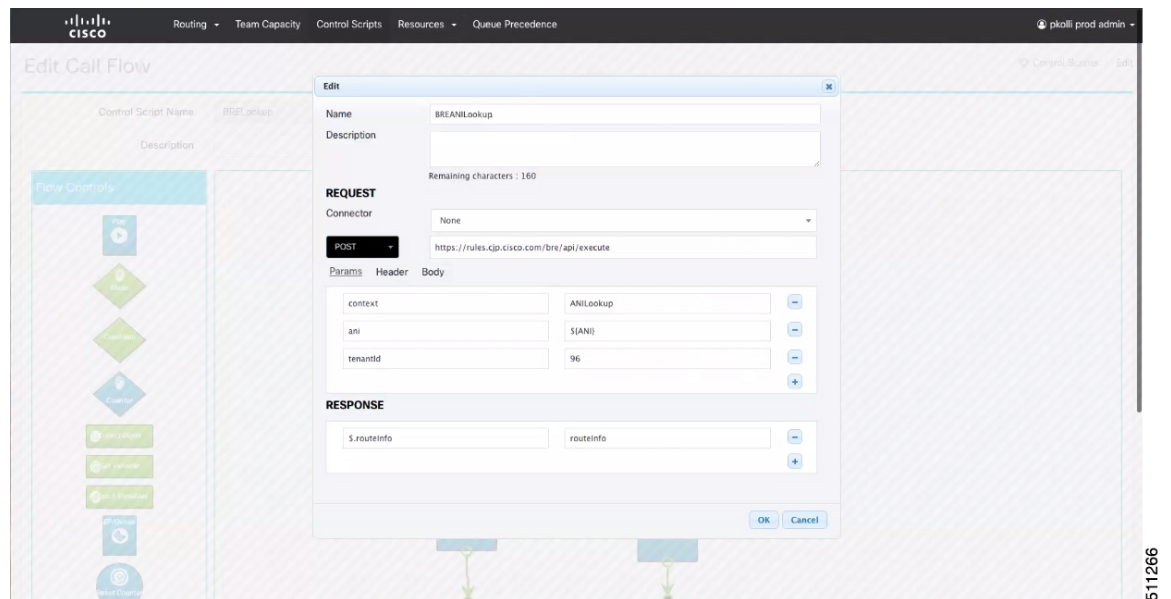
   a) Click **OK** to save the values.

Step 6 Finish the control script based on the *routeInfo* returned in the Response.