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# Genesys Rules System Deployment Guide

Rule Templates

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# Rule Templates

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There are a number of components that can be created in a rule template.

## Actions and Conditions

Actions and conditions define WHEN/THEN scenarios, such as WHEN a customer is a Gold customer, THEN target the GoldAgentGroup. The WHEN statement is the condition, and the THEN statement is the action. A rule may have zero or more conditions, and one or more actions. This example also includes parameters: the status of the customer (Gold) and the name of the Agent Group (GoldAgentGroup).

Whenever a condition contains a rule language mapping that begins with `eval(...)`, you must enclose the entire expression in parenthesis, as follows:

```
( eval(....) )
```

This will ensure it will compile properly when used with the NOT operator.

[|Actions Editor](#)

[|Conditions Editor](#)

## Enumerations

Enumerations are used to define lists of possible choices that will be displayed to the business rule author, when the author is creating rules that are based on the rule template. In some cases, the list of possible choices will be selected dynamically from Genesys Configuration Server objects or from external data sources. For WFM Activities and Multi-Site Activities, the list of possible choices is retrieved dynamically from the Genesys WFM Server. Thus, enumerations are used during definition of a discrete list of choices that will not change dynamically.

[|Enumerations Editor](#)

## Fact Models

A fact model structures basic knowledge about business operations from a business perspective. A fact model focuses on logical connections (called facts) between core concepts of the business. It indicates what you need to know about the business operations in order to support (or actually do) those operations.

A good fact model tells you how to structure your basic thinking (or knowledge) about the business process based on a standard vocabulary. By using standard, business-focused vocabulary, it ensures that the business rules themselves can be well-understood by key stakeholders such as business

analysts. For example, in your business you may have a Fact that represents a Customer, and another Fact that represents an Order.

The Customer could have fields such as name, age, location, credit rating, and preferred language. The Order may have fields such as order amount and order date. A rule could be constructed using these values such as:

When Customer is at least 21 years old and his order is > 100.00 then invite customer to participate in survey.

|[Fact Model Editor](#)

## Events

In release 8.1.2, in order to support Complex Event Processing, template developers need to be able to designate certain facts as events, and rules authors need to change the way that the DRL is generated when a fact is designated as an event.

So the fact model was enhanced to include events, and the fact model dialog now includes a Create Event button. An event has the following fields:

- Name
- Description
- An optional list of Properties.
- User-defined expiration metadata for the event

In GRAT, the @role meta-data tag determines whether we are dealing with a fact or an event. The @role meta-data tag can accept two possible values:

- fact—Assigning the fact role declares the type is to be handled as a regular fact. Fact is the default role.
- event—Assigning the event role declares the type is to be handled as an event.

|[Fact Model Editor](#)

## Functions

Functions are used to define elements other than Conditions and Actions. The Functions editor enables you to write specific Java functions for different purposes for use in rule templates. The specified functions may then be used in the rule language mappings (see [Rule Language Mapping](#)).

When the rule templates are created, the rule developer publishes them to the Rule Repository, making them available in the GRAT for business users to create rules.

Actions and conditions can contain parameters. Various types of parameters are supported. Refer to the Genesys Rules Development Tool Help for detailed information about creating parameters in the Genesys Rules Development Tool, including examples of parameters.

Certain dynamic parameter types that refer to external data sources require a Profile to be selected. The Profile is defined as a Script object of Data Collection type, and it provides connection information that enables the GRAT to retrieve this dynamic data from the external data source. The next sections describe how to configure Profiles for database, Web Service, and Workforce Management parameters.

### |Functions Editor

## Database Parameters

**Database Parameter Properties**

| Property | Mandatory/optional | Description                                                                                 |
|----------|--------------------|---------------------------------------------------------------------------------------------|
| driver   | Mandatory          | The name of the jdbc driver to be used. For example, <code>com.mysql.jdbc.Driver</code>     |
| url      | Mandatory          | The url for the database in the correct format for the jdbc driver to be used.              |
| username | Mandatory          | A valid username to connect to the database.                                                |
| password | Mandatory          | The password needed for the user to connect to the database.                                |
| initSize | Optional           | The initial size of the connection pool. The default is 5.                                  |
| maxSize  | Optional           | The maximum size of the connection pool. The default is 30.                                 |
| waitTime | Optional           | The maximum time (in milliseconds) to wait for obtaining a connection. The default is 5000. |

In general, the optional values do not need to be set or changed.

In the Genesys Rules Development Tool, you can only configure database parameters with an SQL `SELECT` statement. Any other type of statement will fail when configured.

### |Parameters Editor

## Web Service Parameters

In Configuration Server, Web Service Scripts must have a section called `webservice`. The table below lists the properties that you can specify for web service parameters.

**Web Service Parameter Properties**

| Property   | Mandatory/optional | Description                                                      |
|------------|--------------------|------------------------------------------------------------------|
| host       | Mandatory          | The host for the service.                                        |
| base-path  | Mandatory          | The base path to access the service.                             |
| protocol   | Optional           | The default is <code>http</code> .                               |
| port       | Optional           | The default is <code>80</code> .                                 |
| headers    | Optional           | Any custom HTTP headers that are needed for the service.         |
| parameters | Optional           | Any custom HTTP settings that are needed to tune the connection. |

In general, the parameters values do not need to be set or changed. Headers and parameters are lists in the following format:

`key:value[ ,key:value]`

**Warning:**

You cannot specify headers or parameters that contain `"`, `"` in the value.

Warning: If you are sending a message to the service, it is expected that `Content-Type` is specified in the header since it defines the overall message interaction with the server. An optional charset can be included. For example, `Content-Type:application/json;charset=UTF-8`.

In the Genesys Rules Development Tool, you have to completely define the message to be sent and it must be constant. No variable substitution is done. The XPath Query is used to pull values out of the response from the server. The response must be in XML or JSON, otherwise this will not work. A valid XPath query for the response must be specified. This depends entirely on the service you interface with.

**Note:**

The message is sent to the server only once per session. This is done both for performance reasons and because the values in the response are expected to be relatively constant.

In the Genesys Rules Development Tool, the path for the parameter is added to the `base_path` in the script.

For example:

If the Script contains:

```
host = api.wunderground.com
base_path = /auto/wui/geo/ForecastXML/
```

and the GRDT specifies:

```
query type = List
XPath Query = //high/fahrenheit/text()
HTTP Method = GET
path = index.xml?query=66062
message (not set)
```

then the message that is sent is:

```
GET /auto/wui/geo/ForecastXML/index.xml?query=66062 HTTP/1.1
```

This will return the week's highs in Fahrenheit:

```
81
77
81
81
83
85
```

[|DETAIL Parameters Editor](#)

## Workforce Management Parameters

In Configuration Server, Workforce Management Scripts must have a section called wfm. Table 4 lists the properties that you can specify for Workforce Management parameters.

**Workforce Management Parameter Properties**

| Property             | Mandatory/optional | Description                                               |
|----------------------|--------------------|-----------------------------------------------------------|
| wfmCfgServerAppName  | Mandatory          | Configuration Server application name for the WFM server. |
| wfmCfgServerUserName | Mandatory          | Configuration Server user name.                           |
| wfmCfgServerPassword | Mandatory          | Configuration Server password.                            |
| wfmServerUrl         | Mandatory          | URL of WFM Server.                                        |

When configuring a new parameter of type “Workforce Management” under the Genesys Rules Development Tool, simply name the parameter and choose the WFM profile (script object just created) from the drop-down list. When the author is using this parameter, the GRAT will fetch the current list of WFM Activities from the WFM Server and display them to the rule author. [|Parameters Editor](#)