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Using the ACME Sample Application

intelligent Workload Distribution 8.5.0

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Using the ACME Sample Application 8.5

This document describes how to install, configure, and use the sample application (ACME) provided with iWD 8.5. The web page from where you have downloaded these instructions also includes some additional sample XML files and a couple of updated files to optionally use for the sample ACME web site. These instructions assume you are using the latest version of ACME that is provided with iWD Manager 8.5.0 or later.

These procedures assume that you have successfully completed at least the steps described in the Installation chapter of the iWD 8.5 Deployment Guide, including the installation and configuration of the Genesys Rules System (GRS). At the end of that chapter, if you deploy your Solution, you should see on the iWD Services screen that all the services have started up, with no error messages appearing. You should also be able to launch the Genesys Rules Development Tool (GRDT) and successfully access your GRS rules repository, and successfully launch the Genesys Rules Authoring Tool (GRAT) as well.

The ACME sample configuration itself consists of three files, all of which are provided on the iWD DVD:

- `acme.xml`—This file will be imported into the iWD configuration database through iWD migration tool . It will create a new Solution (ACME) that includes the technical configuration (iWD services) as well as the business structure (iWD Solution, Departments, and Processes).
- `acme_grat.xml`—This file will be imported into your Genesys Rules System rules repository through GRAT and contains the business rules for the ACME sample
- `iWD_ACME_Rules`—This is an Eclipse rule template project that you will import into the GRDT workspace, and then publish to the GRS repository.

In order to use the ACME sample configuration, you should import it into its own iWD managed tenant. You can link this iWD managed tenant to an existing tenant in your Configuration Server environment, so you don't have to replicate all the iWD-related applications in Configuration Server to use for the ACME sample (such as Interaction Server and its associated databases). You can reuse the same iWD Manager and iWD Runtime Node applications you have already have.

Warning

The ACME sample application is just that—a sample. It is provided as a way for users to familiarize themselves with a working example of iWD configuration and business rules. Because it is a sample, it is not supported by Genesys Customer Care. Although it has undergone basic testing, you may find errors or omissions as you work through the examples.

Prepare the Genesys Rules System for the ACME Sample

1. In Genesys Administrator or Configuration Manager, create a Script object that will serve as the connection profile to allow GRAT to connect to your iWD configuration database. This is required for several rule parameters included in the iWD 8.5 Standard Rules Template, such as capturePoint. The Script must be created under the Environment tenant because that is where the iWD Standard Rules Template will be migrated to, since it is coming from the System tenant in the iWD configuration database. Under the Environment tenant, create a new Script object of type Data Collection. Give the Script object a meaningful name such as iWD Manager DB Connection Profile. On the Annex tab of the Script object, add a single section called database. In that section, add four options with the following values:

- **driver**—JDBC driver used by your database server. For example, for Microsoft SQL Server 2005 this might be:

com.microsoft.sqlserver.jdbc.SQLServerDriver Refer to your database server documentation for the exact syntax.

- **url**—JDBC url to connect to the iWD configuration database. For example, for Microsoft SQL Server, the URL to connect to a database called IWD_CONFIG on the host name mcr810iwd might be:

```
jdbc:sqlserver://mcr810iwd:1433;databaseName=IWD_CONFIG
```

Refer to your database server documentation for the exact syntax.

- **username**—Username of database server user with access to the iWD configuration database
- **password**—Password of database server user

Save the Script. If you are in a multi-tenant Configuration Server environment, switch to your child tenant. Create an identical iWD Manager DB Connection Profile object in the child tenant's Scripts folder.

2. Launch the Genesys Rules Development Tool (GRDT). If you have not already done so, import the iWD Standard Rules Template (iWD_Standard_Rules) and the Acme Rules Template (iWD_ACME_Rules). These are provided in the form of Eclipse projects, that you are importing into the GRDT workspace. The iWD Standard Rules Template can be found on your file system, inside a ruleTemplates directory where the iWD Manager supporting files were installed. The Acme Rules Template can be found inside the acme\ruleTemplates directory where the iWD Manager supporting files were installed. The two projects will appear in the GRDT Project Explorer view.
3. Right-click on each of the two rule template projects and select **Properties**. Navigate to Template Properties and ensure that the iWD_Standard_Rules project is associated with the Environment tenant, and the iWD_ACME_Rules project is associated with the ACME tenant, or whatever the appropriate child tenant is in Configuration Server (if you using a multi-tenant Configuration Server). Click **OK** to save the changes on each.
4. Open the parameters node of the iWD_Standard_Rules project. Double-click the capturePoint rule parameter. For the Profile name property, select the iWD Manager DB Connection Profile created earlier, if it is not already selected. Save the parameter.
5. Check that templates with the names iWD_Standard_Rules and iWD_ACME_Rules do not already exist in the GRS repository in other tenants. If they exist, rename the template(s) in GRDT before publishing, and update the acme_grat.xml file before importing in GRAT by changing the template name(s) in this line:

```
<TemplateNamesAndVersions>iWD_ACME_Rules [41],iWD_Standard_Rules_ACME  
[40]</TemplateNamesAndVersions>
```

6. Publish both the iWD_Standard_Rules and the iWD_ACME_Rules project to the GRS repository.

Import and Configure the ACME Solution in iWD Manager

1. Under the tenant System Import the standard iWD 8.5 configuration file iwd.xml using the migration tool. Refer to the Migration to 8.5.0 section in iWD 8.5 Deployment Guide for usage details.
2. Start up iWD Manager and log in. Start your application server. Navigate to the iWD Manager URL as described in the **Installing iWD Manager** procedure in the Installation chapter of the iWD 8.5 Deployment Guide. For the log in dialog, where it asks you to specify the name of the iWD Manager application, you should use the name of the iWD Manager application you created as part of the **Installing iWD Manager** procedure in the Installation chapter.
3. Import the standard iWD 8.5 media icons configuration. In iWD Manager, if you have not already done so, under the System tenant you must import the standard iWD 8.5 media icons configuration file iwd_media_icons.xml. iwd_media_icons.xml is located in the config directory that is created when you installed iWD Manager.
4. Start up GAX (Genesys Administrator Extension) and log in. Start up your GAX application server. Navigate to GAX URL as described in the “Installing the iWD GAX Plugin Component “ procedure in Installation chapter of the iWD 8.5 Deployment Guide. Under the System tenant, create a new managed tenant called ACME. Procedure for creating a new tenant is described in Creating the (Tenant and) Solution in iWD GAX Plugin section in iWD 8.5 Deployment Guide.
5. Under ACME tenant import the acme.xml file using the migration tool. Refer to Migration to 8.5.0 section in iWD 8.5 Deployment Guide for usage details.
6. Import the standard iWD 8.5 media icons configuration under ACME tenant In iWD Manager open the ACME tenant in the tenant selection drop-down box and then select the **Import/Export** link in the left-hand navigation menu, while in the **General** section. From the **Import/Export** screen, import the iwd_media_icons.xml file. iwd_media_icons.xml is located in the ...\\iWD Manager\\config directory. If everything went OK, you will see a message appear at the bottom of the screen informing you that the import was completed successfully.
7. Under **Services**, select the **Configure Ixn Custom Properties** node, and check for any mapping errors that are displayed. If there are any mapping errors, click the **Configure Ixn Custom Properties** button to update your configuration. If any updates are made, you will need to restart your Interaction Server.
8. Create Integrated Capture Points (Web Service Capture Point and XML File Capture Point). Refer to eServices Integrated Capture Points Guide for details on creating Integrated Capture Points.

Import the ACME Rules Package in Genesys Rules Authoring Tool

1. Launch the Genesys Rules Authoring Tool (GRAT)
2. Select your tenant. Expand the ACME Solution node in the navigation tree and select the **New Rule Package** link.
3. Click the **Import Rule Package** button. Navigate to the location on your file system where the `acme_grat.xml` file is stored. This file is located in the directory `...\acme\config\` that was created when you installed the iWD Manager installation package. On the **Import Rule Package** dialog, fill in the missing properties:
 - **Business Name**—ACME_Rules
 - **Package Name**—acme
 - Do not check the **Auto-save each rule** checkbox

Clicking **Import** will then import the ACME sample business rule package into your environment.

4. Select your new rule package in the GRAT navigation tree. Update the rule templates associated with the rule package by first unchecking the version of `iWD_ACME_Rules` that is currently checked, and then checking the latest versions of the `iWD_Standard_Rules` and `iWD_ACME_Rules`.

Warning

Exporting and Importing rule packages is meant to be done in conjunction with exporting/importing rule templates. That is, a rule package contains a reference to the rule template(s) that were used to build the package and thus the supported process is to build a rule package from one or more templates and then export/import them together. The ACME sample rule package does not follow this standard process because it is being provided by Genesys. It was based on the same `iWD_ACME_Rules` template that is included with iWD Manager, but it is nevertheless important to understand that under normal operating procedures you would not import a rule package without having access to the exact version of the rule template(s) that were used to build the package.

5. Navigate to each rule to review and validate the rule. There are rules at the rule package level (which you can view by clicking on the **Rules** tab while the rule package is selected in the navigation tree), at the **Finance Department** level, at the **Sales Department** level, and at the **Order** level, which is a **Process** under the **Sales Department**. There is a **Validate** option in the drop-down list in the lower-left corner of the **Rules** tab, which you can select after selecting a particular rule.
6. Deploy the ACME rule package by clicking on the **Deploy Rules** node in the navigation tree and clicking the **Deploy Now** button.

Complete Final Configuration Steps

1. If you not already done so, import the IWDBP business process into your Genesys Configuration Server. This would have been done for you already if you ran the iWD Setup Utility. If not, you can import it through Interaction Routing Designer (IRD). In IRD, open the **Interaction Design** link on the navigation bar and click on the **Business processes** icon. Double-click on any existing business process to open the **Interaction Design** window. Use **File>Import** to navigate to the location of the `iwdbp.wie` file, to import it. By default this file will be in the config directory where your iWD Manager supporting files were installed on your file system.
2. Objects. Double-click the **Iwd_Esp_List** List object. You should see this item there:
 - GREServerList

If it is not present, you should add it. To edit the GREServerList, click on it and then select the downward-pointing arrow to the right of the item name. If it does not already exist, add a new key-value pair where the Key is the Solution ID of the ACME Solution, and the Value is the name of the Genesys Rules Engine application in your configuration, as it appears in Genesys Configuration Manager or Genesys Administrator (for example, `Genesys_Rules_Engine`). Click **OK**. Create a new list object called **Iwd_Package_List** if it does not exist, or edit the existing one. Create one item called **RulePackageList**, and edit it. Add a new key-value pair where the Key is the Solution ID of the ACME Solution (`ACME_I` by default), and the Value is the package name (not the Business Name) of the ACME rule package, as it appears in GRAT (for example, `acme`). Click **OK**.

Important

This List object should have been created in your Genesys Configuration environment when you ran the iWD Setup Utility, as described in the iWD 8.5 Deployment Guide.

3. Through Genesys Configuration Manager or Genesys Administrator, check that you have an agent group in your Genesys configuration that matches the agent group used in the Distribution routing strategy that is part of the IWDBP business process provided with iWD. The default agent group is called `IWD` and it is created for you by the iWD Setup Utility. Ensure that you have at least one agent in that agent group who has a capacity rule assigned that allows the agent to handle interactions of the media type `workitem`.
4. Also while in Genesys Configuration Manager or Genesys Administrator, check that your GRAT Server application has your Acme tenant listed on the **Tenants** tab.

Configure the ACME Sample Web Application

Important

This procedure is optional. There are two ways to generate tasks that will be processed by the ACME solution. One is to generate tasks through an ACME sample web site. The second is to generate tasks by using some xml files that are provided with the ACME sample. You need only follow this procedure if you wish to generate tasks using the ACME sample web site.

1. Install a supported database server. The database scripts for the sample ACME Web site are provided for both MySQL and Microsoft SQL Server.

Important

Only scripts for the MySQL database are provided with the ACME sample that comes on the iWD Manager CD. However, the Web site from which you downloaded these instructions includes a script for Microsoft SQL Server, as well as some updated php files to use with your ACME web site, that support both MySQL as well as MS SQL Server.

2. Create a new database for the ACME web application. Give it a meaningful name such as acme.
3. Execute the SQL script against your new database, to create the data that is used by the sample ACME Web site.
 - a. If you are using MySQL, use the create.sql script that is located in the ...\\acme\\db\\ subdirectory inside the iWD Manager directory created when you installed the iWD Manager installation package. By default this path will be:

C:\\Program Files\\GCTI\\iWD Manager\\acme\\db\\
 - b. If you are using Microsoft SQL Server, use the create_mssql.sql file from the Web site where you downloaded this document. This file can be found in the create_mssql.zip archive.
4. Install Apache HTTP Server 2.2 You can find the software at <http://httpd.apache.org/download.cgi>
5. Install PHP 5.2 (thread-safe version of the Windows installer). You can find the software at <http://windows.php.net/download/archives/> Use the newest available version (php-5.2.17-Win32-VC6-x86.msi. Installation options you should select:
 - Web Server Setup—Select Apache 2.2.x Module Select as the Apache Configuration Directory (assuming you picked the default path when you installed Apache 2.2; otherwise, select the path to the \\conf\\ directory based on where you installed Apache 2.2:

C:\\Program Files\\Apache Software Foundation\\Apache2.2\\conf\\

- In Choose Items to Install, select the following Extensions:

- SOAP
 - MySQL (if you are using MySQL as the database for the ACME Web site)
 - MS SQL (if you are using Microsoft SQL Server as the database for the ACME Web site)
6. Edit the Apache `httpd.conf` file located here (if you accepted the default installation directory when you installed Apache earlier):

`C:\Program Files\Apache Software Foundation\Apache2.2\conf\httpd.conf`

and add the following line to the end of the file:

`DirectoryIndex index.php`

Additionally, check that the values for `PHPIniDir` and `LoadModule php5_module` are correct, and update them if they are pointing to the incorrect location of these items.
 7. Edit the `php.ini` file located here (if you accepted the default installation directory when you installed PHP):

`C:\Program Files\PHP\php.ini`

and change:

`short_open_tag = On`
 8. Copy the content of the `...\acme\web\` subdirectory from the iWD Manager installation directory to:

`C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\acme`
 9. Make a copy of `dbInfo.template.php` and rename the copy as `dbInfo.php`. Place this file into `C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\acme`, overwriting the version that is already there.
 10. Edit the renamed `dbInfo.php` and set the following properties. Save your changes when you are done:
 - a. `$DBENGINE` to either `mssql` or `mysql`
 - b. `$USERNAME` to the username of your acme database
 - c. `$PASSWORD` to the password for your acme database
 - d. `$DATABASE` to the name of your acme database
 - e. `$HOSTNAME` to the hostname of your database server
 - f. `$WEB_SERVICE` to the correct Web Service Capture Point URL. You need to provide correct hostname and port for your interaction server and the name of the Web Service Capture Point to be used.
 - g. `$SERVER_URL` = to the correct URL for your ACME web site (e.g. <http://localhost/acme/>)
 11. Start (or restart, if it is already running) the Apache 2.2 service
 12. Open a Web browser and navigate to <http://localhost/acme/>. Verify that the web application works correctly. For example, select **United Kingdom** -> **Contact Us** -> **Information Request Form**. All the fields in the form should be pre-populated with values.

Submit Tasks Through the ACME Web Site

One way to create sample tasks to see iWD in action is to create them through the ACME web site. This assumes that you have followed the instructions **Configuring the ACME sample web application**.

Prior to submitting the tasks, make sure:

- Your application server is started.
 - iWD services under the ACME Solution are deployed and running.
 - Genesys Configuration Server, Interaction Server, and Universal Routing Server are started.
 - The IWDBP business process is present in your configuration and all the routing strategies in IWDBP are activated.
1. Launch the ACME web site. Make sure your web server is running, and then navigate to <http://localhost/acme/>
 2. Select a country from the main page. It does not matter which country you select. There are several different Web forms from which you can select. Each one will create a task in iWD that will be handled slightly differently, based on the business rules configured as part of the ACME sample. Here are the different forms you can submit, and how to navigate to them: Form name How to navigate to the form on the ACME Web site Information Request Form From the Contact Us link on the main ACME page Service Request Form From the Contact Us link on the main ACME page Catalog Request Form From the Products link on the main ACME page Callback Form From the Products link on the main ACME page In addition, there are three other forms you can submit, if you log into the ACME site using a customer username and password. Acceptable username password combinations are: Username Password john_doe qwerty jane_doe password jim_smith jimmy jane_smyth smyth james_macdonald jamesmac This will allow you to access these additional forms: Form name How to navigate to the form on the ACME Web site Complaint Form Acme Co. Customer Menu Address Change Form Acme Co. Customer Menu Order Form Acme Co. Customer Menu
 3. If your iWD services, Interaction Server, and URS are running, you will note a confirmation ID on the screen after you submit each of these web forms. The confirmation ID will equate to the Capture ID of the task.
 4. If it's not already running, launch iWD Manager. Navigate to the Global Task List from the navigation menu. Select a node in the Global Task List navigation tree to see the tasks at that node. For example, you can select the ACME Solution node to see all the tasks at the Solution level. You can also select a particular Department or Process to see the tasks at that level of the business hierarchy. The navigation tree also has nodes for each Capture Point service you have running, so these tasks would appear under the Web Service Capture Point node.
 5. At this point, if you have Genesys Agent Desktop, Interaction Workspace, or some other agent desktop configured, you can log in any agent who belongs to the iWD agent group, and accept a task in queue. Otherwise, you can manually cancel any task through the Global Task List. Otherwise, it will remain in Queued status indefinitely. Most of the tasks have business rules configured that include reprioritization. This means that if you wait long enough, you will see the Priority of that task increase.
 6. You can select a task in the Global Task List and review both the **Attributes** tab, which will show you all the attributes (key-value pairs) of the task, as well as the History tab, which will provide an audit trail of everything that has happened to the task since it was captured.
 7. You may want to review the business rules behind the ACME sample. See the section **Description of**

the ACME business configuration below.

Submit Tasks Through the ACME Sample XML Files

As an alternative to creating the ACME sample Web site, you can also create sample tasks in iWD by using some or all of the sample XML files that are included with the ACME sample.

Prior to submitting the tasks, make sure:

- Your application server is started.
- iWD services under the ACME Solution are deployed and running.
- Genesys Configuration Server, Interaction Server, and Universal Routing Server are started.
- The IWDBP business process is present in your configuration and all the routing strategies in IWDBP are activated.

Important

The iWD Google site has two additional sample XML files that you can use, to supplement the three that are provided on the iWD Manager CD. These can be found in the `extraACMESampleXMLFiles.zip` archive on the Google site. Also note, there is one change you need to make to `CatalogRequest.xml` if you want to use it. Open the file, and change `<RequestType> .. </RequestType>` to `<Request_Type> .. </Request_Type>`. Resave the file.

1. Be sure that your XML File Capture Point service has directories configured where you will place the sample XML files in order to be captured. The directories should actually exist on your file system; otherwise you should not have been able to deploy the XML File Capture Point successfully.
2. When you are ready, copy one or more of the sample XML files into the directory that is configured under the `incomingFileDirectory` property of the capture point service.
3. If you refresh the Windows Explorer after a few seconds, you should see these files disappear, which means they were picked up by iWD.
4. If the files were captured by iWD, they will disappear from the incoming file directory after a few seconds, and a copy of each of the files will be written to the `capturedFileDirectory` directory.
5. If there are problems with your files, a copy of the problematic file will be placed into the `errorFileDirectory` directory, along with a text file describing the problem. You can test this by modifying one of the sample files by removing the closing XML tag for one of the task attributes.
6. If it's not already running, launch iWD Manager. Navigate to the Global Task List from the navigation menu. Select a node in the Global Task List navigation tree to see the tasks at that node. For example, you can select the ACME Solution node to see all the tasks at the Solution level. You can also select a particular Department or Process to see the tasks at that level of the business hierarchy. The navigation tree also has nodes for each capture point service you have running, so these tasks would appear under the XML File Capture Point node.
7. At this point, if you have Genesys Agent Desktop, Interaction Workspace, or some other agent desktop

configured, you can log in any agent who belongs to the IWD agent group, and accept a task in queue. Otherwise, you can manually cancel any task through the Global Task List. Otherwise, it will remain in Queued status indefinitely. Most of the tasks have business rules configured that include reprioritization. This means that if you wait long enough, you will see the Priority of that task increase.

8. You can select a task in the Global Task List and review both the **Attributes** tab, which will show you all the attributes (key-value pairs) of the task, as well as the **History** tab, which will provide an audit trail of everything that has happened to the task since it was captured.
9. You may want to review the business rules behind the ACME sample. See the section **Description of the ACME business configuration** below.
10. You may also want to experiment with changing some of the attributes of the tasks in one or more of the sample XML files, and seeing how that affects what you see in the Global Task List.

The ACME Business Configuration

The following describes the business configuration of the ACME sample tenant, including the business rules. Once you study and understand the behavior of the ACME business rules, you will be able to make changes to the rules and then submit new tasks to the system so you can observe the impact of your new rules. When you make a change to a rule you will need to redeploy the rule package.

The general functionality of the business rules configured for the ACME sample is the following:

<tabber>

Package-level (Global) Rules=

Package-Level (Global) Rules

A rule that is configured at the rule package level is also known as a Global Rule. Such a rule is evaluated for every iWD task, regardless of the eventual classification of that task (that is, regardless of what department and process the task is pegged to). For the ACME sample configuration, there are two types Global Rules configured. A rule to set an Archive Destination for all tasks Two rules to assign tasks to the correct Process based on Capture Point, and some other criteria Archive Destination rule

This rule will set an Archive Destination of Delete for all tasks. This is configured as a Classification rule, which means it will run once during the lifecycle of a task, unless the task is Restarted at some point in its lifecycle. This rule (as with all rules in the ACME sample) is set to be active starting on January 1, 2010, with no fixed end date.

This Global Rule is an example of a Linear Rule, which is a simple rule expression where each condition and action is represented as a separate row. In this example, there are no rule conditions; there is only a single rule action. Thus, this rule action will be evaluated as true for all tasks, since there are no rule conditions that are checked by the rule engine.

This rule specifies that all tasks, when they meet the archiving criteria described in the IWDBP business process, will be deleted. These criteria are that the task has met its specific expiration date (which is set in a different set of business rules) and is either Canceled, Completed, or Rejected. At that point, it will be deleted from the Interaction Server database.

Set Archive Destination for all tasks		Add Condition ▼	Add Action ▼	Group ▼
Section	Expression	Parameters		
When				
Then	Archive destination	Delete		

Process Assignment Rules

These rules use the Capture Point as one of the criteria to determine the Process to which tasks should be assigned, along with some additional criterion that depends on the Capture Point.

In iWD 8.0, it was possible to create Classification rules at the Capture Point level. In iWD 8.1, where the Genesys Rules System is used, Capture Point rules do not exist. Thus, in order to simulate Capture Point rules, you create Global Rules that use the Capture Point as rule condition.

The first rule is for the tasks coming through the Web Service Capture Point, and the second rule is configured for the tasks coming through the XML File Capture Point. Of course only one of these rules will be evaluated per task, depending on how the task was submitted. Both these rules are Classification rules, which means they will be evaluated once.

Web Service Capture Point Rule

The rule evaluated for tasks coming through the Web Service Capture Point simply assigns each task to an iWD process, based on the ID of the Web form, on the ACME sample Web site. This rule is in a Decision Table format. This Decision Table has a single rule condition (Webform ID is) and a single rule action (Assign iWD process). Since each Web form only has a single, unique ID, there is no chance that multiple rows in this Decision Table will be evaluated as true.

Assign process based on Webform ID				
		Add Condition ▼	Add Action ▼	
ID	Name	Webform ID is	Capture point is	Assign iWD process
DTR-8	Information Request Webform 4711	4711	Webservice Capture Point	Sales Department > Information Request
DTR-9	Call Back Request Webform 4712	4712	Webservice Capture Point	Sales Department > Callback Request
DTR-10	Catalog Request Webform 4713	4713	Webservice Capture Point	Sales Department > Catalog Request
DTR-11	Complaint Form Webform 4714	4714	Webservice Capture Point	Sales Department > Complaint
DTR-12	Address Change Webform 4715	4715	Webservice Capture Point	Sales Department > Address Change
DTR-13	Order Form Webform 4716	4716	Webservice Capture Point	Sales Department > Order
DTR-14	Service Request Webform 4717	4717	Webservice Capture Point	Sales Department > Service Request

Webform ID is a custom attribute of the iWD tasks. That is, it is not a core or extended attribute that is common to all tasks, such as Product, Priority, etc. Because this rule uses a custom attribute, the rule condition must be coming from the ACME Rules Template. This is a template that is provided as part of the ACME configuration that includes both rule conditions and actions specific to the ACME examples. It is used to supplement the rule conditions and actions that are included in the iWD Standard Rules Template.

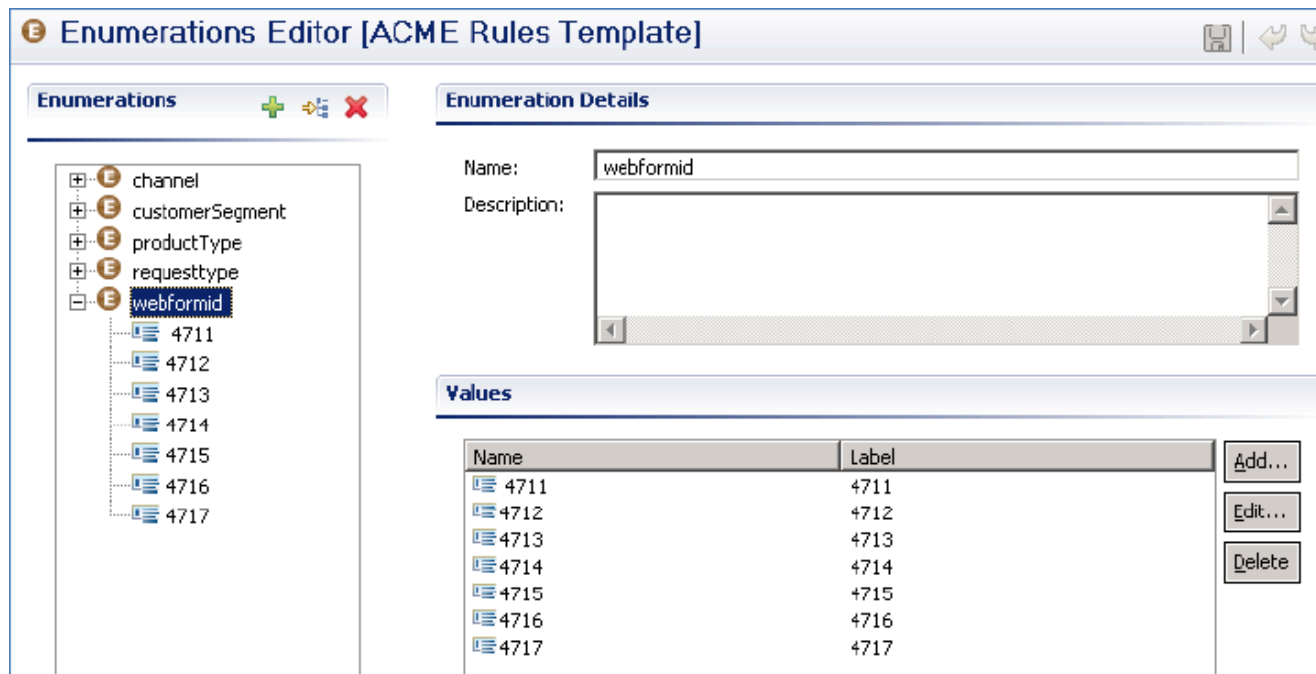
Looking at the ACME Rules Template, we can see the rule condition that evaluates a parameter called webformid.

The screenshot shows a software interface for configuring business rules. On the left, under the 'Conditions' tab, there is a tree view of available conditions: 'Order Total exceeds', 'Order Total is', 'Request Type is', 'Task Channel is', and 'Webform ID is'. The 'Webform ID is' condition is selected and highlighted. On the right, the 'Condition Details' panel shows the configuration for this condition. The 'Name' field contains 'Webform ID is'. The 'Language Expression' field contains 'Webform ID is "{webformid}"'. The 'Rule Language Mapping' field contains the code: `eval("{webformid}".equals(getStringValue("webformid", $data)));`

We can see that the Language Expression of the rule condition defines the text that the business user will see when he adds this rule condition to a business rule. The part of the Language Expression that appears in quotes and brackets `{webformid}` defines what parameter is used in that rule condition. In order to understand the behavior of that parameter that will be seen by the business user, we need to look at the parameters of the ACME Rules Template.

The screenshot shows the 'Parameters Editor [ACME Rules Template]' window. On the left, under the 'Parameters' tab, there is a tree view of available parameters: 'channel', 'customerSegment', 'orderTotal', 'orderTotal_1', 'orderTotal_2', 'productType', 'requesttype', and 'webformid'. The 'webformid' parameter is selected and highlighted. On the right, the 'Select Enumeration Parameter Details' panel shows the configuration for this parameter. The 'Name' field contains 'webformid'. The 'Description' field is empty. Below this, the 'Configuration' section shows a dropdown menu labeled 'Enumeration:' with 'webformid' selected.

On this screen we can see that `webformid` is a parameter of type `Select Enumeration`, which means that in the UI where the user constructs business rules, the user will be provided a drop-down list with a pre-defined (enumerated) set of items from which to select. The enumeration corresponding to the `webformid` parameter is also called `webformid`. For parameters of this type, the rule template developer must name-value pairs where the label is what the business user will see when constructing the business rule, and the name is the actual value of the piece of attached data that the rule engine will evaluate during runtime.



Returning to the rule condition itself, we can see that the Rule Language Mapping defines how the rule engine should evaluate a rule containing this condition, during runtime. For each task, the rule engine will receive a data object called \$data, which is a set of key-value pairs from the interaction/task itself. These key-value pairs are coming from the attached data of the interaction/task. When the rule engine receives this \$data object, and it is evaluating a business rule with the rule condition Webform ID is "{webformid}", it knows that it must evaluate whether the value configured in the instantiation of the rule is equal to the actual value of the webformid key, in the \$data object of the interaction/task. In other words, when the business user constructed the business rule, he selected an actual value for webformid, in each row of the Decision Table. The rule engine will look at this actual value and compare it with the value of the webformid attached data key and see if they two are equal. If so, then the rule will evaluate as true; if not, the rule will evaluate as false.

XML File Capture Point Rule

The rule evaluated for tasks coming through the XML File Capture Point assigns each task to an iWD process, based on the Request Type. The Request Type is a custom attribute of each task, which can be found by looking at the actual sample XML files. For example, in the Complaint.xml file, you can see the Request_Type attribute specifies the Request Type as Product Issue. This attribute is within the section of the file, which is where all custom attributes are specified.

```
<data>
<Request_Type>Product Issue</Request_Type>
<firstName>Jeff</firstName>
<lastName>Thompson</lastName>
<addressLine1>39 Rhonda Lane</addressLine1>
<city>Fredericton</city>
<state>NB</state>
<country>Canada</country>
```

```
<contactNumber>5065551212</contactNumber>
<email>jeff@gmail.ca</email>
</data>
```

Assign process based on request type				
		Add Condition ▼	Add Action ▼	
ID	Name	Request Type is	Capture point is	Assign IWD process
DTR-1	Address Change request type is assigned to Address Change	Address Change	XML File Capture Point	Sales Department > Address Change
DTR-2	Product Issue request type is assigned to Complaint	Product Issue	XML File Capture Point	Sales Department > Complaint
DTR-3	Products / Services request type is assigned to Order	Products / Services	XML File Capture Point	Sales Department > Order
DTR-4	General Inquiry request type is assigned to Dunning	General Inquiry	XML File Capture Point	Financial Department > Dunning
DTR-5	Refund request type is assigned to Refund	Refund	XML File Capture Point	Financial Department > Refund

This rule uses a rule condition that evaluates the value of a custom attribute, similar to the use of webformid in the previous rule. In this case, the custom attribute is Request_Type. You can take a look at the ACME Rules Template to see how that rule condition is constructed. It is very similar to the webformid rule condition in the previous section.

[-] Department Rules=

For the ACME sample, almost all business rules are configured at the Department level. This includes:

- Setting an expiration date for all tasks in the department, for archiving purposes
- Setting initial values for all tasks in the department, such as priority, business value, and due date
- Setting a time for the first reprioritization of the tasks in the department
- Setting a new priority for the tasks in the department, at the defined reprioritization interval
- Special reprioritization rule for tasks in the department that are overdue

Financial Department Rules

Based on the description above, you can see that the rules configured at the Financial Department level have fairly self-explanatory names.

Rules		Audit Trail				
ID	Name	Description	Phase	Calendar	Pending Deployment	Start Date
DT-54	Fin. Dep. / Set task expiration date for archiving		classification			Jan 1, 2010
DT-67	Fin. Dep. / Set initial values for tasks		classification			Jan 1, 2010
DT-72	Fin. Dep. / Set initial reprioritization time		prioritization			Jan 1, 2010
DT-78	Fin. Dep. / Reprioritization for tasks not overdue		prioritization			Jan 1, 2010
DT-81	Fin. Dep. / Reprioritization for overdue tasks		prioritization			Jan 1, 2010

We can drill down into each of these rules to see what they do. Remember that for any of the rule conditions or actions you see in these rules, you can review the rule template(s) to better understand

what type of data the business rule engine is evaluating when it encounters a rule that includes this condition or action. Some of the conditions and actions will be sourced from the Standard Rules Template, and some will be sourced from the ACME Rules Template. The Standard Rules Template can be found in the Modules & Components section of iWD Manager, under the System tenant.

DT-54: Fin. Dep. / Set task expiration date for archiving

This is a classification rule, which means it runs once, during the classification phase of the task lifecycle. The only circumstances under which the rule will be re-evaluated is if a task is restarted (either through the Global Task List or via a capture adapter).

Fin. Dep. / Set task expiration date for...				Add Condition ▼	Add Action ▼
ID	Name	Process is	Task expires in		
DTR-52	Archive Dunning	Financial Department > Dunning	12	days	
DTR-53	Archive Refund	Financial Department > Refund	10	days	

DT-67: Fin. Dep. / Set initial values for tasks This is also a classification rule. As you can see, it sets initial values for business value and priority. It also sets a due date for each task. There is a separate row in the decision table for each of the processes under the Financial Department.

Fin. Dep. / Set initial values for tasks				Add Condition ▼	Add Action ▼
ID	Name	Process is	Set business value	Task Due in	Set Priority
DTR-65	Initial Refund values	Financial Department > Refund	100	6 minutes	100
DTR-66	Initial Dunning values	Financial Department > Dunning	80	10 minutes	80

DT-72: Fin. Dep. / Set initial reprioritization time This is a prioritization rule, which means it will be re-evaluated whenever prioritization rules are called from a routing strategy. However, the rule condition `Is first prioritization` that is used in this decision table means that the rule will only evaluate to true the first time that prioritization rules are executed. For that reason, it could have been configured as a classification rule instead of a prioritization rule.

This rule condition checks for the presence of an iWD task attribute (key-value pair) called `IWD_reprioritizeDateTime`. If this attribute is not present yet in the interaction's attached data, then this condition will be evaluated as true. The only purpose for this rule is to set an initial time that the task should be reprioritized. The rule action `Reprioritize after` sets the value of `IWD_reprioritizeDateTime`, which determines the next time that a queued task should be submitted to the Prioritization routing strategy, when prioritization rules will be executed.

Fin. Dep. / Set initial reprioritization ...									
Add Condition ▼ Add Action ▼									
ID	Name	Due Time is in				Is first prioritization		Reprioritize after	
DTR-69	Due in 20 mins or more	20	to	60	minutes	Is first prioritization		10	minutes
DTR-70	Due in 10 to 20 minutes	10	to	20	minutes	Is first prioritization		2	minutes
DTR-71	Due in 0 to 10 minutes	0	to	10	minutes	Is first prioritization		1	minutes

DT-78: Fin. Dep. / Reprioritization for tasks not overdue This rule defines the dynamic reprioritization of tasks that are not overdue. Each row in the decision table defines the set of conditions (Due Time is in—as an offset from the current time—and Business value is) that need to evaluate as true in order for the task's priority to be increased. In addition to increasing the priority of the task, the rules also set the next reprioritization time. This may or may not be the same as the initial reprioritization interval that was set in DT-72.

The presence of the rule condition Is reprioritization ensures that these dynamic reprioritization rules only evaluate as true when we intend to increase the priority of a task. In other words, we want to avoid a situation where an initial priority is given to a task, and then the task priority is immediately increased. Instead, we want to set an initial reprioritization time (for example, 10 minutes), at which point we would start to increase the priority above its initial value. And then we'd continue to increase the priority at specified time intervals, depending on various conditions.

Fin. Dep. / Reprioritization for tasks n...													
Add Condition ▼ Add Action ▼													
ID	Name	Due Time is in				Business value is			Is reprioritization	Increase Priority	Reprioritize after		
DTR-73	Reprioritize tasks due in 20 min or more	20	to	60	minutes	0	to	1000	Is reprioritization	0	10	minutes	
DTR-74	Reprioritize tasks due in 10 to 20 min, value 50 or above	10	to	20	minutes	50	to	1000	Is reprioritization	2	1	minutes	
DTR-75	Reprioritize tasks due in 10 to 20 min, value 0 to 49	10	to	20	minutes	0	to	49	Is reprioritization	1	2	minutes	
DTR-76	Reprioritize tasks due in 0 to 10 min, value 50 or above	0	to	10	minutes	50	to	1000	Is reprioritization	10	1	minutes	
DTR-77	Reprioritize tasks due in 0 to 10 min, value 0 to 49	0	to	10	minutes	0	to	49	Is reprioritization	5	1	minutes	

DT-81: Fin. Dep. / Reprioritization for overdue tasks This rule serves the same purpose as DT-78, except it checks whether the task is overdue. Depending on business value, the priority of the task will be increased appropriately, and this will continue to happen every minute, until the task is distributed, completed, or canceled.










Fin. Dep. / Reprioritization for overdue ...									
Add Condition ▼ Add Action ▼									
ID	Name	Task is overdue	Business value is			Is reprioritization	Increase Priority	Reprioritize after	
DTR-79	Overdue, Business Value is 50 or above	Task is overdue	50	to	1000	Is reprioritization	20	1	minutes
DTR-80	Overdue, Business Value is 0 to 50	Task is overdue	0	to	50	Is reprioritization	10	1	minutes

Sales Department Rules

The rules for tasks that are assigned to the Sales Department are very similar to those configured for the Financial Department. The main difference is that the initial task values are set differently depending on whether or not we know what the Request Type is for a given task. Also, if the task is pegged to the Order process, there are specific values we want to set, so there is a unique rule for that. That particular rule uses a rule condition that is only relevant for orders, which is why it requires its own rule (DT-51), rather than just being included in DT-34.

Rules		Audit Trail				
ID	Name	Description	Phase	Calendar	Pending Deployment	Start Date
DT-30	Sales Dep. / Set expiration dates for archiving		classification			Jan 1, 2010
DT-34	Sales Dep. / Set initial values for tasks where only process is given		classification			Jan 1, 2010
DT-47	Sales Dep. / Set initial values for tasks where process and request type is given		classification			Jan 1, 2010
DT-51	Sales Dep. / Set initial values for order process tasks		classification			Jan 1, 2010
DT-58	Sales Dep. / Set initial reprioritization time for tasks not overdue		prioritization			Jan 1, 2010
DT-62	Sales Dep. / Reprioritization for tasks not overdue		prioritization			Jan 1, 2010
DT-64	Sales Dep. / Reprioritization for overdue tasks		prioritization			Jan 1, 2010

We can drill down into each of these rules to see what they do. DT-30: Sales Dep. / Set expiration dates for archiving

Sales Dep. / Set expiration dates for ar...		Add Condition ▼		Add Action ▼	
ID	Name	Process is	Task expires in		
DTR-23	Archive Catalog Request	Sales Department > Catalog Request	10	days	 
DTR-24	Archive Address Change	Sales Department > Address Change	10	days	 
DTR-25	Archive Information Request	Sales Department > Information Request	10	days	 
DTR-26	Archive Callback Request	Sales Department > Callback Request	10	days	 
DTR-27	Archive Order	Sales Department > Order	10	days	 
DTR-28	Archive Complaint	Sales Department > Complaint	10	days	 
DTR-29	Archive Service Request	Sales Department > Service Request	10	days	 

This rule achieves the same purpose as DT-54 under the Financial Department. DT-34: Sales Dep. / Set initial values for tasks where only process is given This rule serves the same purpose as DT-67 under the Financial Department, but it only covers a few of the processes under the Sales Department. If a task belongs to processes that are not covered in this decision table, none of the actions in this rule will be taken.

Sales Dep. / Set initial values for task...		Add Condition ▼		Add Action ▼			
ID	Name	Process is	Task Due in		Set business value	Set Priority	
DTR-31	Catalog Request	Sales Department > Catalog Request	16	minutes	200	200	
DTR-32	Address Change	Sales Department > Address Change	17	minutes	100	100	
DTR-33	Complaint	Sales Department > Complaint	18	minutes	400	444	

DT-47: Sales Dep. / Set initial values for tasks where process and request type is given This rule is similar to DT-34 above, except it adds an extra condition, which checks for the task's Request Type. Note that for the Complaint process, it is possible that this rule may override the values described in DT-34 for the task's due date, business value, and priority. If a task is assigned to the Complaint process and the Request Type is NOT Product Issue, Billing Issue, Customer Service Issue, or Other, then the values for due date, business value, and priority would be set by DT-34. But if the Request Type is one of these described in DT-47, then those attributes will be take the values from this decision table. This is an example that shows why the order of the rules is relevant.

Sales Dep. / Set initial values for task...		Add Condition ▼		Add Action ▼			
ID	Name	Process is	Request Type is	Task Due in		Set business value	Set Priority
DTR-35	Information Request / Corporate Information	Sales Department > Information Request	Corporate Information	14	minutes	280	280
DTR-36	Information Request / Press Kit	Sales Department > Information Request	Press Kit	15	minutes	270	270
DTR-37	Information Request / Shareholder Information	Sales Department > Information Request	Shareholder Information	12	minutes	300	300
DTR-38	Information Request / HR/Employment Opportunities	Sales Department > Information Request	HR/Employment Opportunities	14	minutes	290	290
DTR-39	Complaint Form / Product Issue	Sales Department > Complaint	Product Issue	7	minutes	480	480
DTR-40	Complaint Form / Billing Issue	Sales Department > Complaint	Billing Issue	5	minutes	500	500
DTR-41	Complaint Form / Customer Service Issue	Sales Department > Complaint	Customer Service Issue	6	minutes	490	490
DTR-42	Complaint Form / Other	Sales Department > Complaint	Other	8	minutes	470	470
DTR-43	Callback Form / Products / Services	Sales Department > Callback Request	Products / Services	10	minutes	380	380
DTR-44	Callback Form / General Inquiry	Sales Department > Callback Request	General Inquiry	11	minutes	360	360
DTR-45	Callback Form / New Customer Inquiry	Sales Department > Callback Request	New Customer Inquiry	9	minutes	400	400
DTR-46	Service Request / Address Change	Sales Department > Service Request	Address Change	10	minutes	655	655

DT-51: Sales Dep. / Set initial values for order process tasks This rule sets initial values for the same task attributes as DT-34 and DT-47, but only for tasks that are assigned to the Order process. In this case, we are interested in the value of the Order, in order to determine its priority, business value, and due date.

Sales Dep. / Set initial values for orde...		Add Condition ▼		Add Action ▼			
ID	Name	Process is	Order Total is		Task Due in	Set business value	Set Priority
DTR-48	Order total between 0 and 999.99	Sales Department > Order	0.00	to	1000.00	4 minutes	900
DTR-49	Order total between 1,000.00 and 9,999.99	Sales Department > Order	1000.00	to	10000.00	3 minutes	910
DTR-50	Order total between 10,000.00 and 99,999,999.99	Sales Department > Order	10000.00	to	100000000.00	2 minutes	920

You will note that the Order Total is rule condition has values that overlap from one row to the next. For example, the value 1000.00 is used in both DTR-48 and DTR-49. To understand how this rule

will behave when it's evaluated, we need to take a look at the `Order Total is` rule condition in the ACME Rules Template. We can see that the rule condition with the Language Expression

`Order Total is "{orderTotal_1}" to "{orderTotal_2}"`

has this Rule Language Mapping:

```
eval( ((double){orderTotal_1}) <= getDoubleValue("Order_Total", $data) &&
((double){orderTotal_2}) > getDoubleValue("Order_Total", $data) );
```

Here we can see that this condition is checking for inclusiveness on the lower boundary of the order total expression, but it's not inclusive on the upper boundary. We can also see that in the rules themselves, the rule Name is useful to indicate this behavior to the business user.

DT-58: Sales Dep. / Set initial reprioritization time for tasks not overdue This rule is functionally equivalent to DT-78 under the Financial Department.

Sales Dep. / Set initial reprioritization...					Add Condition ▾	Add Action ▾		
ID	Name	Due Time is in ⚠				Is first prioritization ⚠	Reprioritize after ⚠	
DTR-55	Due in 0 to 2 minutes	0	to	2	minutes	Is first prioritization	1	minutes
DTR-56	Due to 2 to 4 minutes	2	to	4	minutes	Is first prioritization	2	minutes
DTR-57	Due in 4 or more minutes	4	to	999	minutes	Is first prioritization	3	minutes

DT-62: Sales Dep. / Reprioritization for tasks not overdue This rule is functionally equivalent to DT-81 under the Financial Department.

Sales Dep. / Reprioritization for tasks ...										Add Condition ▾		Add Action ▾	
ID	Name	Due Time is in ⚠				Is reprioritization ⚠	Increase Priority ⚠	Reprioritize after ⚠					
DTR-59	Reprioritize tasks due in 0 to 2 minutes	0	to	2	minutes	Is reprioritization	9	1	minutes				
DTR-60	Reprioritize tasks due in 2 to 4 minutes	2	to	4	minutes	Is reprioritization	3	1	minutes				
DTR-61	Reprioritize tasks due in 4 or more minutes	4	to	999	minutes	Is reprioritization	1	3	minutes				

[-] Process Rules=

For the ACME sample, almost all business rules are configured at the Department level. There is only one process that has a rule configured, which is the Order process, under the Sales Department. In an actual deployment of iWD it may be more common to have process-level rules rather than department-level rules, but this depends on the policies of the enterprise and whether the policies are normally common across all processes in a department, or whether you need to drill down to the process level to determine the appropriate rules to evaluate.

Order Process Rule

Rules		Audit Trail	
ID	Name	Description	Phase
Rule-68	Normalize order product / set productType task attribute based on Captured attribute Product Name 1		classification

RULE-68: Normalize order product / set productType task attribute based on Captured attribute Product Name 1 We can see by looking at this rule that it's a simple linear rule with only one rule action, and no parameters.

Normalize order product / set productTyp...		
Section	Expression	Parameters
When		
Then	Normalize Order Product	

Therefore, the only way to understand how this rule will behave when evaluated is to look at the ACME Rules Template. In this case, the rule action with the Language Expression Normalize Order Product has the following Rule Language Mapping:

```
setStringValue("IWD_ext_productType", getStringValue("Product Name 1", $data), $data);
```

All this rule condition will accomplish is to set the value of the task attribute IWD_ext_productType to a single value. The Order Form on the ACME web site allows the user to order multiple products, and for each product ordered, the user can select a product from the Product drop-down list. The possible product names are just Product 1, Product 2, and Product 3. If the user submits an order, for example, that includes Product 2 and Product 3, the Normalize Order Product rule action will set the value of the task attribute IWD_ext_productType to Product 2, which is the first product to appear in the order.