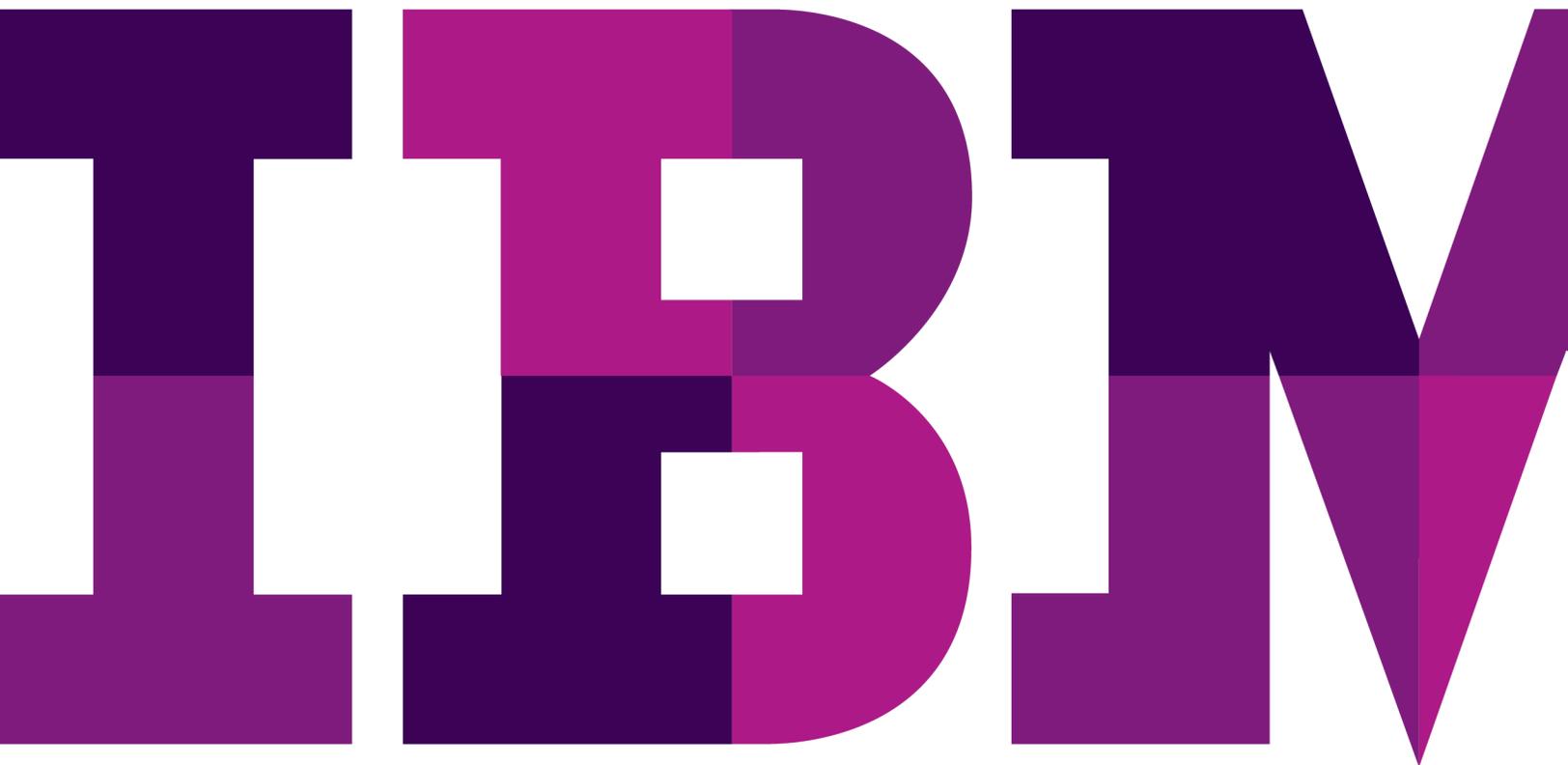


WebSphere Lab Jam

Business Process Management

WebSphere Operational Decision Management (Events)

Lab Exercises



An IBM Proof of Technology

Catalog Number

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Overview

Business agility through synchronized business and IT cycles

The ability to deal with change in operational systems is directly related to the decisions that they are able to make. Every transaction, order, customer interaction or process is dependent on decisions, which are in turn dependent on particular internal or external requirements and situational contexts. Every change therefore affects decisions, many of which are handled automatically within business systems.

Business agility depends on responsive, intelligent decision automation. With WebSphere Operational Decision Management, you manage decisions separately from business applications, with more flexibility and responsiveness to the changing needs your business.

When decision management is separate from application code, business experts can define and manage the business logic, reducing the amount of time and effort required to update that business logic in production systems, and increasing the ability of an organization to respond to changes in the business environment.

WebSphere Operational Decision Management includes two main components, on both distributed and z/OS platforms:

- **Decision Server** for managing decisions separately from applications.

New IT architectures like Service Oriented Architecture (SOA) allow loose coupling of the applications or processes. Business logic can be encapsulated as decision services, which the applications and processes can call. Decision services enable the operation of Business Process Management (BPM) solutions with decision management.

- **Decision Center** for putting decision management in the hands of those who drive the business.

Business users can manage decisions directly with limited dependence on the IT department. The degree of dependence can range from limited review by business users of the business logic implemented by developers to complete control over the specification, creation, testing, and deployment of the business logic by business users.

From business policy to business rules

Business policies are statements that are used to make decisions such as pricing for insurance or loan underwriting, eligibility approvals for social or health services, or product recommendations for online purchases. Business policies are typically found inside application code, in the form of if-then statements, although they may also be stored elsewhere for documentation purposes, such as in procedural manuals and other documents.

A business policy can be expressed as several business rules. Here is an example of the kind of business policy that might be familiar:

`Customers who spend a lot of money in a single transaction need an upgrade.`

The process of capturing rules consists of formalizing the vocabulary required to express the policy as a conceptual object model and representing the logic of the business policy as if-then statements.

After the vocabulary has been created, the above business policy can be implemented with the following business rule:

```
if
    the customer's category is Gold
    and the value of the customer's shopping cart is more than $1500
then
    change the customer's category to Platinum
```

When a business policy also has an IT policy or security policy embedded in it, you can combine Business Rule Management with additional capabilities to handle the business policy aspects. For example, *customers who spend a lot of money should be routed to a preferential service* or *customers who spend a lot of money require additional security on their transactions*.

In the form of business rules, the business logic can be packaged and called from the application code as a business rule application. Therefore, changes to the business policy do not require changes to the application or process code.

From event pattern detection to event rules

An event is an electronic signal indicating that a change in the state of the business has occurred. Orchestrating business events so that the right applications run at the right time for the right purpose is a challenge that can be particularly difficult with the large variety of business systems currently running in the enterprise. A wide range of technologies is also employed, ranging from batch processing applications to client/server, and to browser-based intranet and internet applications. Orchestrating the processing of the events that occur in these systems, as well as the events that occur manually, might potentially mean major system redesign and many months of modifications, tests, and deployment.

A rapid business systems orchestration requires an alternative approach to complex and expensive redesign and redeployment of existing systems is required. The solution is to implement a Business Event Processing layer that sits across existing systems, takes advantage of functions already developed in those systems, and manages the complex interactions (business events) that can occur between those systems. This layer of architecture is known as Business Event Processing. The Business Event Processing layer communicates significant events in one business system to other systems that require the information to respond to the critical event.

In large organizations, tens of millions of events occur everyday, but not all events or event occurrences are of equal importance. Providing insight requires the ability to determine when a pattern of seemingly unrelated events from one or more sources has occurred and then to coordinate the execution of the responses to that pattern of events.

Business Event Processing is the ability to sense when a business event or event pattern has occurred (or not occurred), indicating an actionable business situation, and to coordinate the right response or action, at the right time.

Event rules help detect, and respond to, event patterns among like or related events, missing events and aggregate events. Event rules also relate the pattern detection to a context and apply a dimension of time to the pattern. So, for example, the following logic can be created:

```
if events A and B occur and event C does not occur in <time frame>, then do
actions X, Y and Z after time frame
```

For example, on a retail web site, if a customer adds a book to his or her shopping basket (event A) and views the delivery information page (event B) but does not complete the purchase at the online checkout (event C) within one week, then send an E-mail to this customer (action X). After one more day has passed, update the customer favorites database with the book details (action Y), and send a message to the Sales department to tell them this customer did not complete the purchase (action Z).

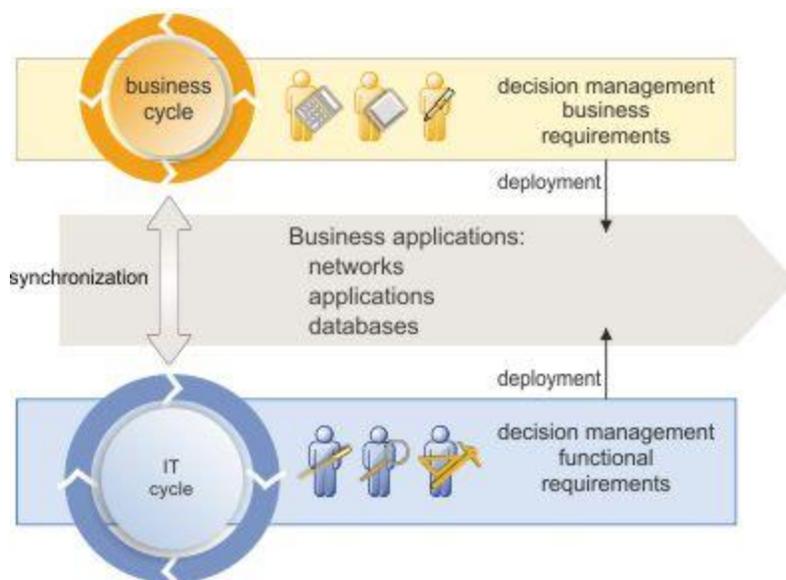
By using predefined logic that describes how business systems are to interact, the event runtime can notify those systems in real time so that they take the appropriate action.

Synchronized business and IT cycles

WebSphere Operational Decision Management provides an environment for designing, developing, and deploying business rule applications and event applications. The IT cycle consists of developing and maintaining this infrastructure. After the infrastructure is set up, distributed business teams can start collaborating through a Web-based environment to create and maintain business rules and events.

The life cycles of decision management and application development can evolve in parallel. Decisions can evolve as required by the business context, without putting an extra load on the development of the application. Each time the application evolves, the decision management environment synchronizes with the application.

With this separation, decisions and application architecture can be managed asynchronously. For example, application developers can develop a new application version in response to changing application infrastructure and additional core business requirements. At the same time, policy managers can work on new decisions delivered in response to an evolving market, changing regulatory environment, or new patterns of events.



In addition to working on different time lines, developers and business users also expect to work with different tools, reflecting their different skill sets and views of the application.

For example, developers are accustomed to the Java world. They use source-code management systems to work simultaneously on separate copies of a project without interfering with each other.

Business users, on the other hand, do not concern themselves with the details of application development, but are interested in testing and managing decisions. Therefore, they need tools that can help them author, organize, and search for rules in the context of the overall policy.

With developers and business users working in their own environments at their own pace, the work of these two groups must be synchronized and merged.

Finally, both developers and business users require access to a rule execution environment to deploy rules to enable testing, validation, and rollout to production of new and changed business logic.

Introduction

This section describes the scenario you will work through during this tutorial.

The Retail Banking Business Application

This tutorial is based on a sample retail banking application. The tutorial objective is to develop the application to support simple business requirements. Initially, we will be sending alerts when card transactions occur. We will then expand the application to correlate activity such as address changes and multiple transactions in order to be more responsive to opportunities and threats. The goal is to introduce the participant to the basic concepts of event processing using Operational Decision Management.

Introducing the Tutorial Environment

This section introduces the components you will be using in the tutorial and the steps you will be taking.

The WebSphere Decision Server CEP modules

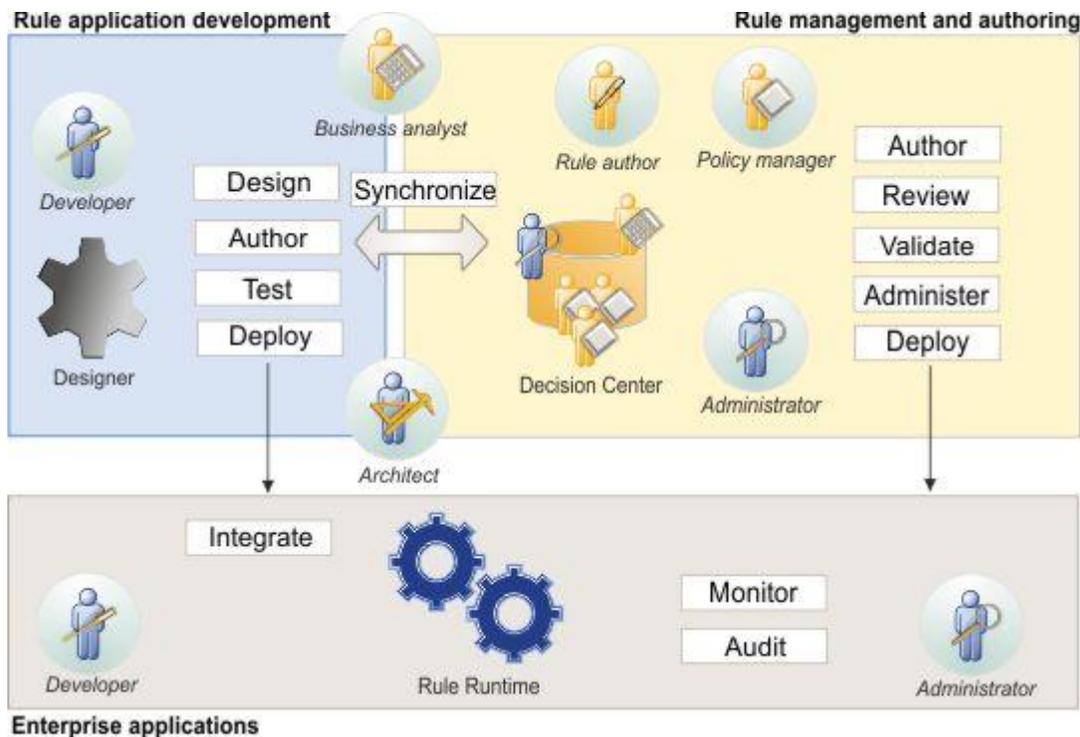
WebSphere Decision Server includes a set of modules that support Complex Event Processing (CEP) management across a variety of different environments, but also work together to provide a comprehensive system. The modules included with WebSphere Decision Server are:

- Event Designer – The development tooling used by developers and architects to develop and integrate event processing with other applications.
- Event Execution Runtime – The event engine that provides the capability to deploy and execute the event rules.

Business Users would frequently leverage other modules not included with WebSphere Decision Server including:

- Decision Center – The Business rule management system providing authoring and governance of rules aimed at business users.
- Business Space – Provides a framework of thin-client, end-user tooling for both design-time and run-time purposes.

WebSphere Operational Decision Management comprises a set of modules that operate in different environments, but also work together to provide a comprehensive decision management platform.



Two categories of users are involved in developing and maintaining a decision management solution:

IT users

Architects, developers, and administrators develop and maintain the event application. Developers work with Event Designer in Eclipse for design and event project development. Using capabilities in Business Space, they can also test event logic against real or fictitious scenarios to support and troubleshoot problems found in Decision Center.

Business users

- Business users work with Decision Center to write and maintain event rules, both during application development and after the application is deployed to production.
- Business users can perform end-user testing and simulation in Business Space. Business analysts can simulate events, run updated rules against recorded historical data, and analyze the outcomes.

Overview of Tutorial tasks

The tutorial also offers an introduction to both **Decision Server and Decision Center** where you take the role of a business user first to manage the event rules developed in Decision Server from a Web-based environment and then the role of an IT user to discover how the business rule application was built.

The tutorial is divided into three parts using the modules provided with WebSphere Decision Server as shown below.

Students are advised to progress through these tasks in order. Each task is divided up into steps that incrementally build the solution to the scenario described in the next section. Solutions are available at certain steps in the tutorial allowing the student to catch up quickly if mistakes are made in earlier tasks.

Pre-requisites

Start Sample Server

Operational Decision Management provides a sample server to run Decision Center. Before signing in to Decision Center, you must start the sample server.

In this tutorial, you start from a blank project and create the event assets to run an example event processing application. By doing so, you discover all the steps required to develop, deploy, and maintain a rule-based application.

To start the Sample Server:

1. Click **Start > All Programs > IBM WebSphere Operational Decision Management V7.5 > Start Samples Server**.
2. Wait until you see the message `BUILD SUCCESSFUL` in the console.

```
[exec]
[exec] wsStartServer:
[exec] [startServer] profileName=WODMSample750 registry=C:\IBM\WebSphere700
17\AppDataServer\properties\profileRegistry.xml
[exec] [startServer] profileHome=C:\IBM\WebSphere70017\AppDataServer\profiles\W
ODMSample750
[exec]
[exec] BUILD SUCCESSFUL
[exec] Total time: 1 minute 14 seconds

checkIfIsInstallingDC:

update.decisioncenter.db:

delete.new.installation.files:

BUILD SUCCESSFUL
Total time: 1 minute 22 seconds
Press any key to continue . . .
```

Note: The server might take a few minutes to start.

3. Enter the following URL in a browser:

`http://localhost:9081/wbe`

- The Events runtime login screen should appear. Enter the following authentication and click the **Login** button.

Username: **admin**

Password: **admin**

Tool: **Administration**

WebSphere. Business Events LOGIN

Welcome to
Administration
IBM Decision Server: Administration lets you manage and control run-time processes, and define and execute reports.

LOGIN

User name:

Password:

Tool:

- Click the **Console** button at the top left to validate that the server is running.

WebSphere. Business Events Logout Refresh Help Change Tool

Console Reports Event Flows

Console

IBM Decision Server Event Runtime © 2003, 2011 IBM Corporation

Version IBM WebSphere Operational Decision Management 7.5.0.0 (Build #20111024-1216 - October 24 2011)

Server instance name SamplesServer

Start time 2011-12-22T13:37:05-0500

Rule groups last reloaded 2011-12-22T13:37:05-0500

Locale en_US

Java version 1.6.0

Show

Lab 1 Events Business Track

In this lab, you will act as a business user, using Decision Center to write, modify, deploy and test event rules.

You will first use Decision Center to become familiar with how event assets are managed and maintained. Next you will create new event rules and deploy them to the event runtime. Finally, you will test and validate the event rules using the capabilities in Business Space.

Pre-requisite: Start the sample server, as described in Start Sample Server, if you have closed it or stopped it.

1.1 Introduction to Decision Center Console

Business users create and edit event rules in Decision Center. Their work is saved in the central repository, which manages versioning, history, and multi-user access.



This task should take you about 60 minutes to complete.

- Step 1: Log into Decision Center Console
- Step 2: Explore: Layout of event assets
- Step 3: Compose: Creation of new Event Rules and Filters
- Step 4: Query: Finding and managing event assets
- Step 5: Analyze: Review and validate the event assets
- Step 6: Project: Manage versioning and deployment

1.1.1 Log into Decision Center Console

Decision Center Console is the browser-based tool used for creating and managing both event and business rule assets. The robust capabilities offered through this interface are one of the features that distinguishes Operational Decision Management from other decision-based platforms.

In this exercise we will describe each component of the Decision Center environment. Later in the lab we will go into more depth of how to use some of these capabilities.

To log into Decision Center Console:

__1. Navigate to the Decision Center Console URL:

```
http://localhost:9081/teamserver
```

__2. Sign in to Decision Center using the following details:

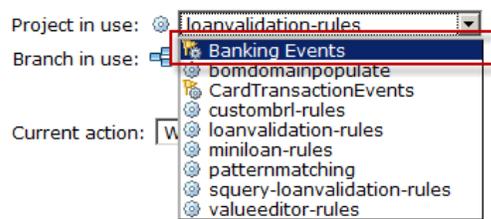
Username: rtsUser1

Password: rtsUser1

Note: Decision Center can handle different user profiles. Here you sign in as a regular business user.

- __3. On the Decision Center **Home** tab, in the **Project in use** field, select **Banking Events**.

Welcome to the Decision Center Home Page



Note:

Depending on the environment you are using, your project list may look different than this screen shot. As long as it contains the **Banking Events** project then you should be all set.

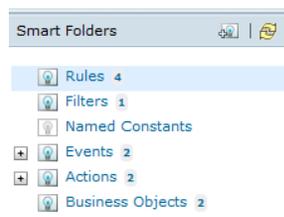
1.1.2 Explore: Layout of event assets

The Explore tab in Decision Center allows you to view and organize the event assets.

- __1. Click the **Explore** tab to open the event project navigation.

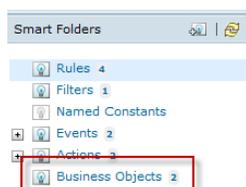


- __2. Note the Smart Folders view on the left-hand part of the screen. This area represents all of the assets contained within this event project.



- __3. We will now view each of the asset types.

- __a. Click the **Business Objects** node in the Smart Folders view. This will display all of the Business Objects within this event project.



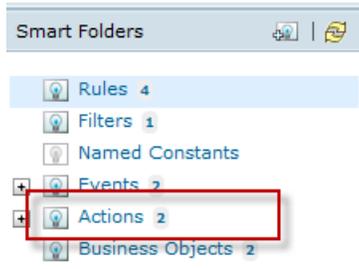
- __b. In the main navigation window, you can also click on each of the Business Objects to get more details about the specific fields, documentation, change history and other important information.



- __c. Click the **Explore** link or the **Explore** tab to return to the Smart Folders view.



- __d. Click the **Actions** node in the Smart Folders view. This will display all of the Actions within this event project.



- __e. You can now click on the individual Action to gain more information about the author, verbalization, change history, fields, and more.



- __f. Click the **Explore** link or the **Explore** tab to return to the Smart Folders view.



- __g. Click the **Events** node in the Smart Folders view. This will display all of the Events for this event project.



- __h. Similar to the Action details, you can view the Event details by clicking on the individual Event in the list.

<input type="checkbox"/>	Actions	Name	Last Changed By
<input type="checkbox"/>		addressChange	admin
<input type="checkbox"/>		cardTransaction	admin

Note:



So far all of the assets we have viewed are read-only. If the Business Objects, Events or Actions need to be modified, this needs to be done through Event Designer, the Eclipse-based developer environment. These assets are for reference-only in the Decision Center environment.

- __i. Click the **Explore** link or the **Explore** tab to return to the Smart Folders view.



- __j. Click the **Named Constants** node in the Smart Folders view. This will display all of the Named Constants for this event.

Named Constants are variables and parameters you can set in the project so that thresholds or values do not need to be entered directly into the Event Rules and Filters. These are especially useful when many Events Rules or Filters share a common value that may need to be modified over time.



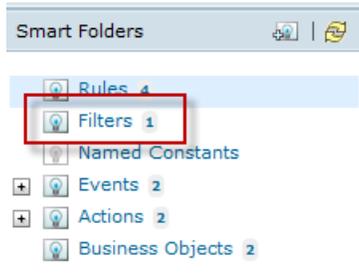
- __k. Notice that there are not yet any Named Constants for this project. New Constants can be created directly from this view as needed.

<input type="checkbox"/>	Actions	Name	Last Changed By
There are no named constants at this level			

- __l. Click the **Explore** link or the **Explore** tab to return to the Smart Folders view.



- __m. Click the **Filters** node in the Smart Folders view. This will display all of the Event Rules for this event project.



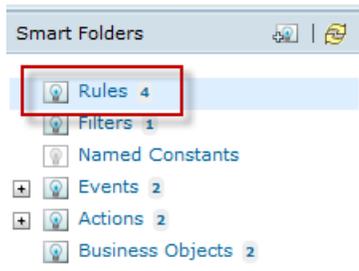
- __n. From the main view you can author new Filters, edit existing, lock, delete and basically manage all Filters in this project. By clicking on an individual Filter we can get information about the content, author, documentation, history and other important details.

<input type="checkbox"/>	Actions	Name	Status	Last Changed By
<input type="checkbox"/>	  	Multiple Occurrences	New	admin

- __o. Click the **Explore** link or the **Explore** tab to return to the Smart Folders view.



- __p. Click the **Rules** node in the Smart Folders view. This will display all of the Event Rules for this event project.



- __q. From the main view you can author new Event Rules, edit existing, lock, delete and basically manage all Event Rules in this project. By clicking on an individual Event Rule we can get very robust information about the content, author, documentation, history and other important details.

<input type="checkbox"/>	Actions	Name	Status	Last Changed By
<input type="checkbox"/>	  	Send Alert at Total Transacti...	New	admin
<input type="checkbox"/>	  	Transaction Alerts	New	admin
<input type="checkbox"/>	  	Watch for Multiple Address Ch...	New	admin
<input type="checkbox"/>	  	Watch for Multiple Large Tran...	New	admin

1.1.3 Compose: Creation of new Event Rules and Filters

In addition to creating Event Rules and Filters from the individual asset management views in the **Explore** area, we can also directly create new assets using the composing area.

- __1. Navigate to the composing area by clicking the **Compose** tab



- __2. Notice that along the left there are options to choose the type of asset we wish to create. When the desired asset has been selected, click the **OK** button in the main navigation area.



- __3. Explore the different assets but **do not** actually create anything yet – this will be covered in more detail later in the lab.

1.1.4 Query: Finding and managing event assets

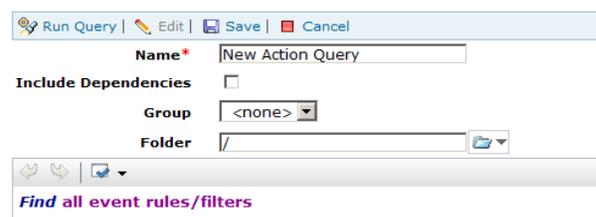
As event projects become larger it is important to easily locate existing assets based on a wide-variety of qualifications. For example, if you are asked to create a new Event Rule that responds to a given Event, you may want to find all assets that use that Event in some way. Similarly, if you want to know if there is already a similar Event Rule or Filter in place you may want to reuse it.

Queries give the capability to quickly find any asset in the event project as well as to optionally take a specific action (such as mark “Deployable”) on those assets that are found.

- __1. Navigate to the query area by clicking the **Query** tab.



- __2. Click the **Query** tab, and click **New**.



- __3. Explore the different options in the query text area by clicking it, moving the cursor to the end of the line, and typing **Ctrl+Space** to bring up the editor menu. We will explore this area in more detail later in the lab.

1.1.5 Analyze: Review and validate the event assets

After you've run a query you will have a list of artifacts matching the query. For example, if you searched for all event rules that trigger a certain action you would see that set of rules and could proceed to make whatever changes were necessary to those rules. We will explore this in more detail later in the lab.

In addition to running a query, you can use the results of a query to generate a report.

To generate a report:

- __1. Navigate to the analyze area by clicking the **Analyze** tab.



- __2. Notice that there are a few

Analyze

Rule Analysis

[Check Project](#)

Check the rules in the current project for issues

Project Report

[Generate Project Report](#)

Generate an HTML report describing the content and properties of project elements

[Manage Merge Reports](#)

Manage Reports generated during merge operation

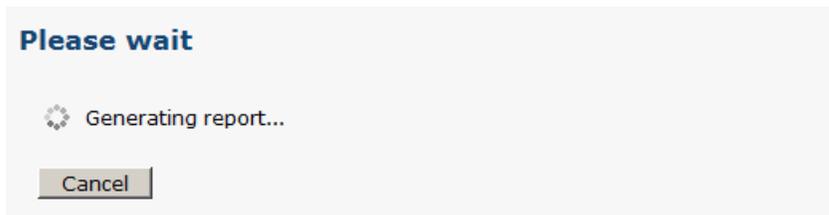
- __3. You now have the option to choose a Query to use to generate the report (for example, only give a report of all Events in the project or give a report of all “deployable” assets). In this project there should not be any saved Queries so just click the **Generate Report** button.

Queries

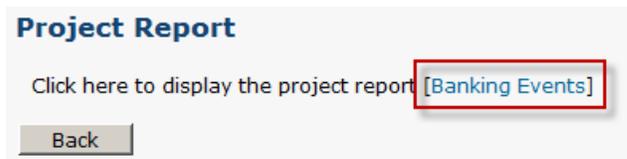
Select the query that will be used to generate the project report

<none>

- __4. The following progress screen will appear for a few moments.



- __5. When the project report has been generated, click on the **Banking Events** link to view the report.



- __6. Review the report and close it when finished.

1.1.6 Project: Manage versioning and deployment

Sometimes multiple people may need to work with the same event rules artifacts. In that case you have the ability to create “branches” of a project; a branch is simply a way to isolate your changes from the changes that others are making.

To manage Subbranches and Baselines:

- __1. Navigate to the project management view by clicking the **Project** tab.



- __2. Notice there are different options for both management and deployment of the project. We will cover these capabilities in more detail later in the lab but for now click the **Manage Subbranches and Baselines** link.

Project

Manage Project

[Manage Subbranches and Baselines](#)

Create, delete, and rename subbranches and baselines for the current project

[Merge Branches](#)

Merge the working branch with another branch

[Edit Project Options](#)

View and edit the options of this project

Deployment

[Deploy Project](#)

Deploy the current project for the selected branch on the runtime repository

- __3. While there should not currently be any subbranches or baselines in this project, this should give a good understanding of where these assets can be managed.

You have now successfully completed the first lab in this series.

1.2 Create a new Filter and Event Rule

Filters and Event Rules are the central assets a user can create, modify and manage in Decision Center. In this lab you will learn how to create these assets and deploy them to the Events runtime.



This task should take you about 30 to 40 minutes to complete.

- Step 1: Log into Decision Center Console
- Step 2: Remove any existing Event Rules
- Step 2: Create a new Filter
- Step 3: Create a new Event Rule
- Step 4: Deploy the modified project

1.2.1 Log into Decision Center Console

To log into Decision Center Console:



Note:

If you are still logged in to Decision Center from the previous lab you can skip to step 1.2.3.

- __1. Navigate to the Decision Center Console URL:

`http://localhost:9081/teamserver`

- __2. Sign in to Decision Center using the following details:

Username: `rtsUser1`

Password: `rtsUser1`

Note: Decision Center can handle different user profiles. Here you sign in as a regular business user.

- __3. On the Decision Center **Home** tab, in the **Project in use** field, select **Banking Events**.

1.2.2 Remove any existing Event Rules

In the current project there may be Event Rules that were already created. For our testing purposes, we will delete these existing Event Rules so that our new Event Rule is easier to find. Don't worry – this project is backed up and part of the lab materials in case a mistake is made.

To delete the Event Rules:

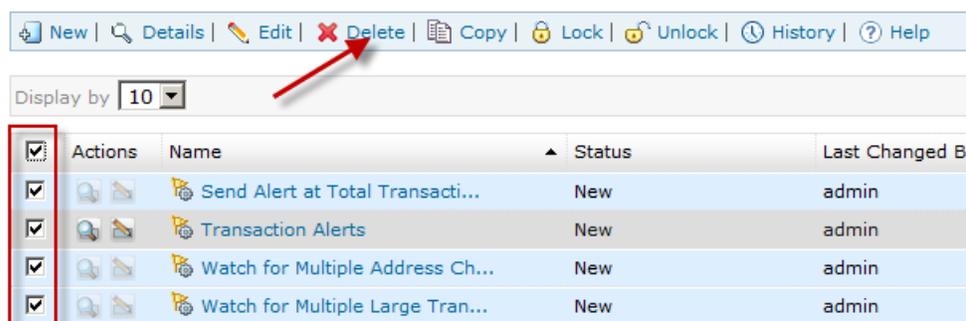
- __1. Navigate to the composing area by clicking the **Explore** tab.



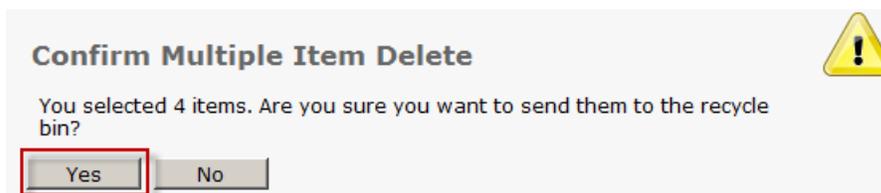
- __2. In the Smart Folders view, click the **Rules** link.



- __3. Select all of the Event Rules (either by checking the box next to each one individually or clicking the checkbox in the column header to check all of them). Then click the **Delete** button.



- __4. Click the **Yes** button to confirm the deletion of these Event Rules.



- __5. You should now see an empty list with no Event Rules.

1.2.3 Create a new Filter

Filters are reusable pieces of logic that can be leveraged in one or more Event Rules. By externalizing the logic we are able to more easily manage the event processing capabilities and grow the application over time.

To create a Filter:

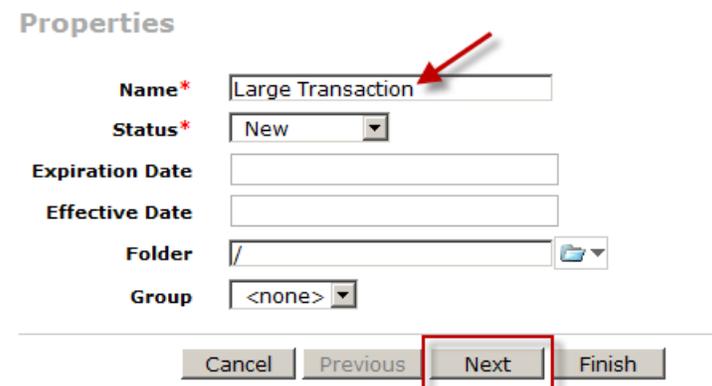
- __1. Navigate to the composing area by clicking the **Compose** tab.



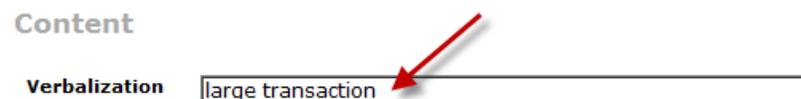
- __2. Select the type **Filter** on the left and click the **OK** button.



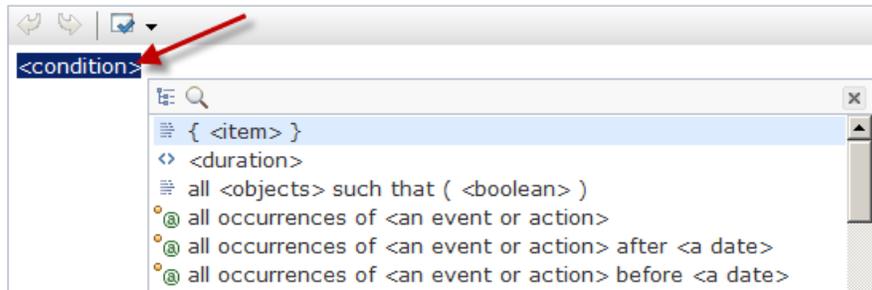
- __3. Enter "Large Transaction" as the name of the new Filter and click the **Next** button.



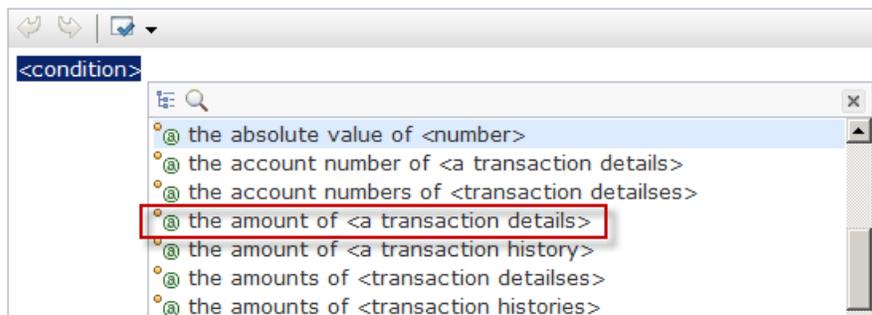
- __4. Notice that the verbalization of this new Filter has been generated for you automatically. You can optionally modify this so that it reads better or is more intuitive when adding the Filter to an Event Rule. In this example, leave the default text "large transaction" as is.



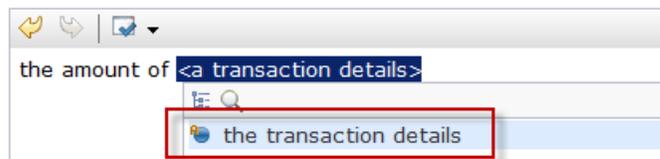
- __5. Below the verbalization is a text box used for writing the Filter. Click the **<condition>** link to view all of the possible options to use in the Filter text. You may also optionally directly type into this box as well.



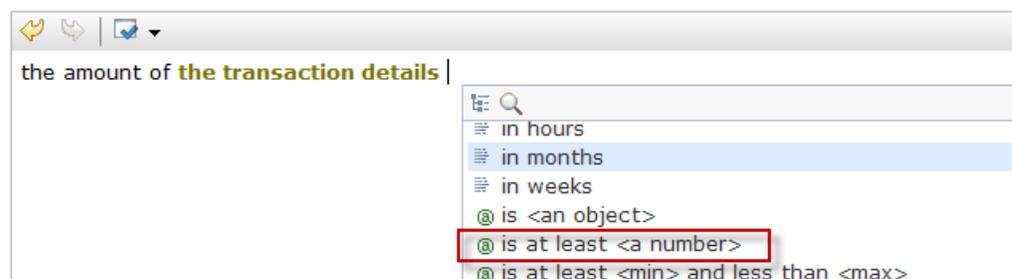
__6. Select the item **the amount of <a transaction details>**.



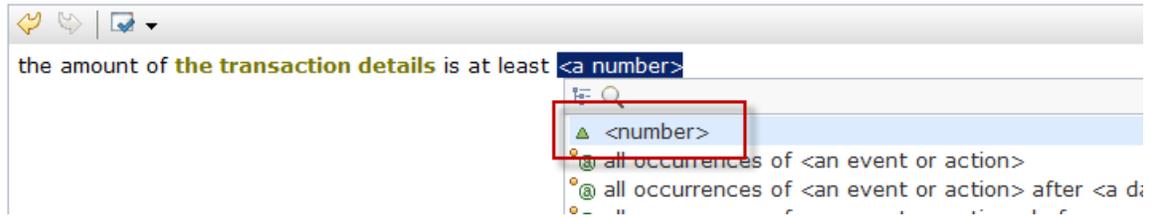
__7. Notice that as you make selections, additional menus will appear guiding you through the creation of the Filter. These menus are contextual and will be dependent of the event project and where you are in the Filter statement. Select the option **the transaction details**.



__8. When the next menu appears, select **is at least <a number>**.



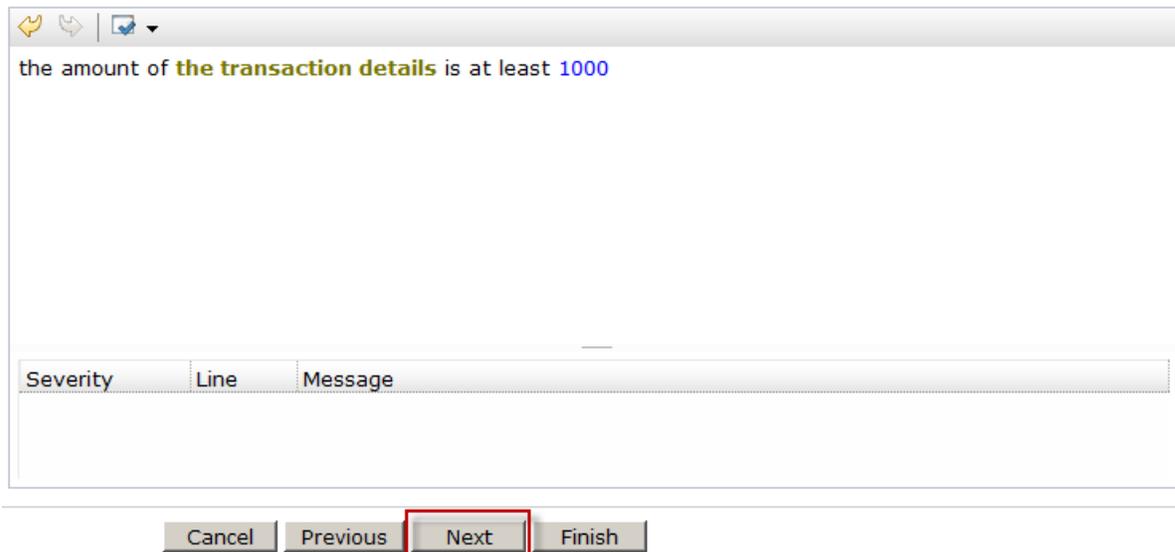
__9. Select **<number>**.



__10. By typing into the box, replace the default "0" with "1000".



__11. Click the **Next** button.



__12. Click the **Next** button again to skip adding tags.

Tags



__13. In the Documentation text box, add a description about what the Filter is meant to do or other important details (does not need to match exactly with the text below).

Documentation

This is a Filter to determine if a transaction is above a certain size.

Cancel Previous **Next** Finish

- __14. In the Version Information text box, add some comments about this particular version of the Filter (does not need to match exactly with the text below) and click the **Finish** button.

Version Information

Add a comment to this version

In this version I made a "large transaction" anything over \$1,000.

Cancel Previous Next **Finish**

- __15. You should now see a summary screen confirming the creation of the new Filter.

1.2.4 Create a new Event Rule

In Event projects, Event Rules are the assets that bring all of the other assets together. They combine an Event, conditions (often in the form of Filters) and one or more Actions. We also specify a "context relationship" (the correlation identifier) which is how Events, Actions and Business Objects may be related over long periods of time and between multiple Events.

To create an Event Rule:

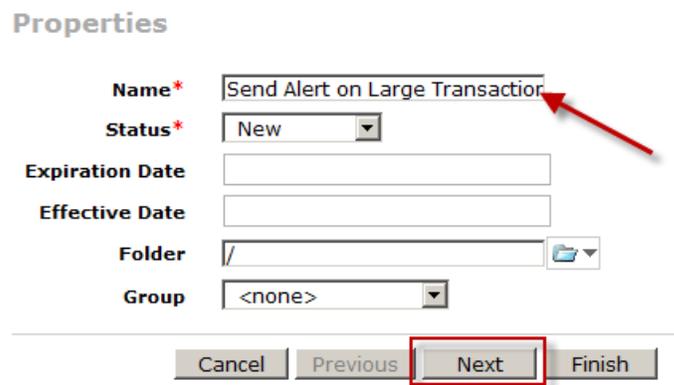
- __1. Navigate to the composing area by clicking the **Compose** tab.



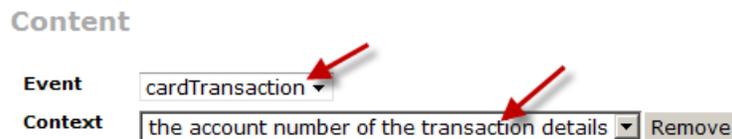
- __2. Select the type **Event Rule** on the left and click the **OK** button.



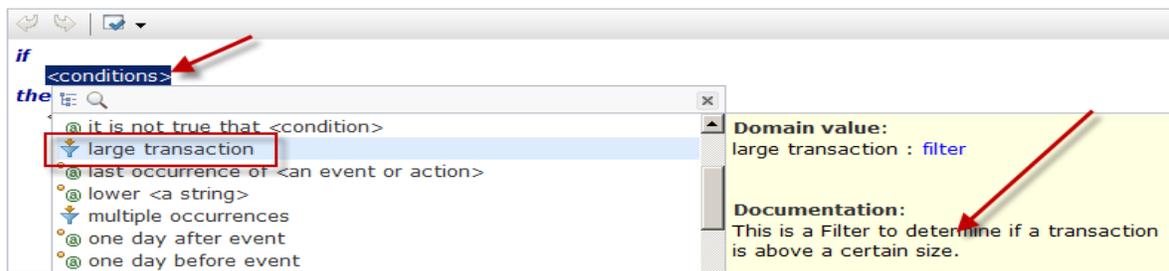
- __3. Enter "Send Alert on Large Transaction" as the name of the new Event Rule and click the **Next** button.



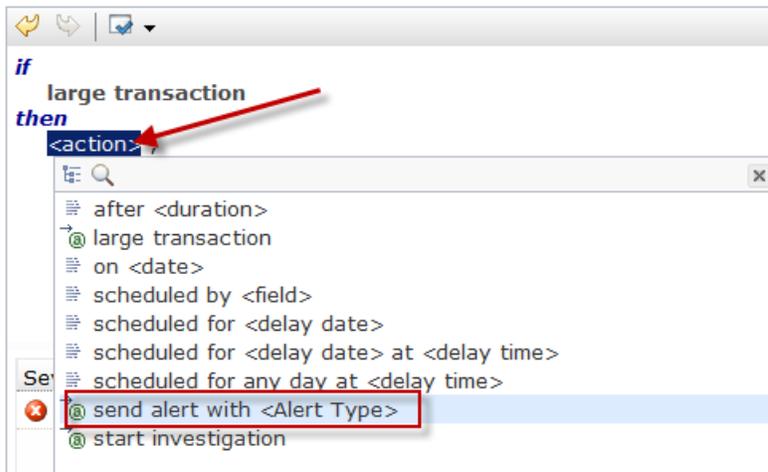
- __4. An Event Rule is always in response to an Event. In addition, we need to identify the "context" that will be used to process the Event Rule (this is how the engine will determine how events are related to one another). For this new Event Rule, select the Event **cardTransaction** and the Context **the account number of the transaction details**.



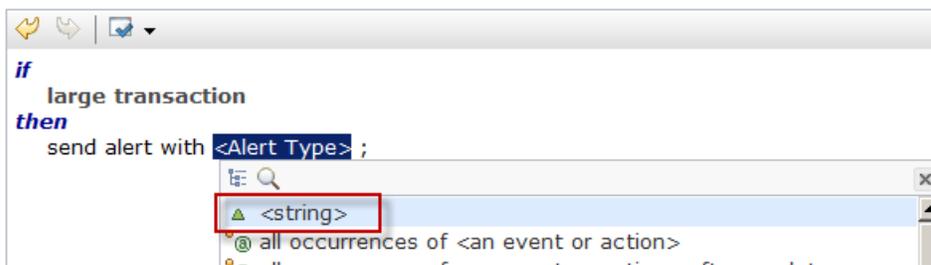
- __5. In the text box, click the **<conditions>** link to open the editor menu. Select the Filter **large transaction** for the condition. Notice that the icon is different (a funnel with a down-arrow indicating a Filter element) and the documentation is what we entered for the previous section of the lab.



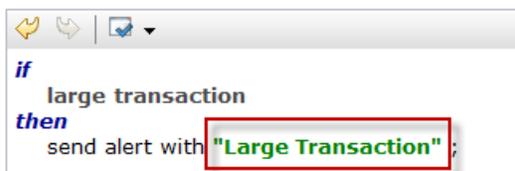
- __6. Click the **<action>** link and choose the item **send alert with <Alert Type>**.



- __7. In the next menu that appears, select the item **<string>** in order for us to enter text for the type of alert being generated.



- __8. Enter the text "Large Transaction" between the quotes to specify the type of alert.



- __9. Click the **Next** button at the bottom of the editor.



- __10. Click the **Next** button to skip adding a tag.

Tags



- __11. Enter some documentation text about the new asset (the text does not need to match what is below) and click the **Next** button.

Documentation

This is an Event Rule that sends an alert when a large transaction occurs.



- __12. In the next screen add some comments about this version (does not need to match what is below) and click the **Finish** button.

Version Information

Add a comment to this version

This version only uses the "large transaction" Filter.



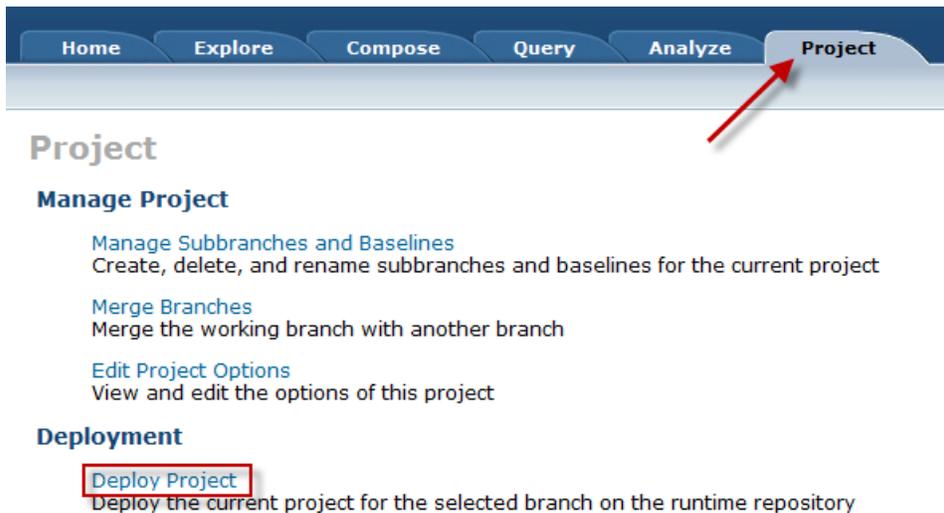
- __13. You should now see a screen confirming the creation of the Event Rule.

1.2.5 Deploy the modified project

As you make changes in Decision Center, you should continually deploy and test the changes. Because a new project deployment does not require any compiling or restarting of the server, it is very easy to incrementally deploy and test projects as they are developed.

To deploy the project:

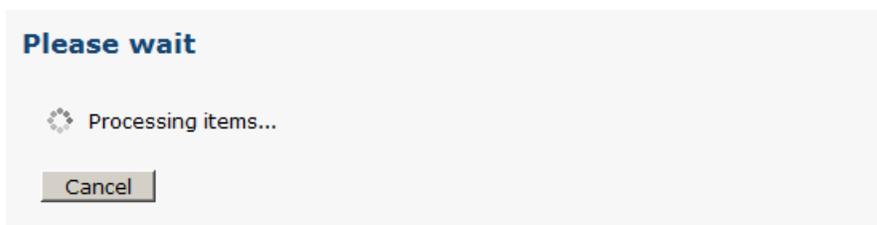
- __1. Navigate to the project area by clicking the **Project** tab and click the **Deploy Project** link.



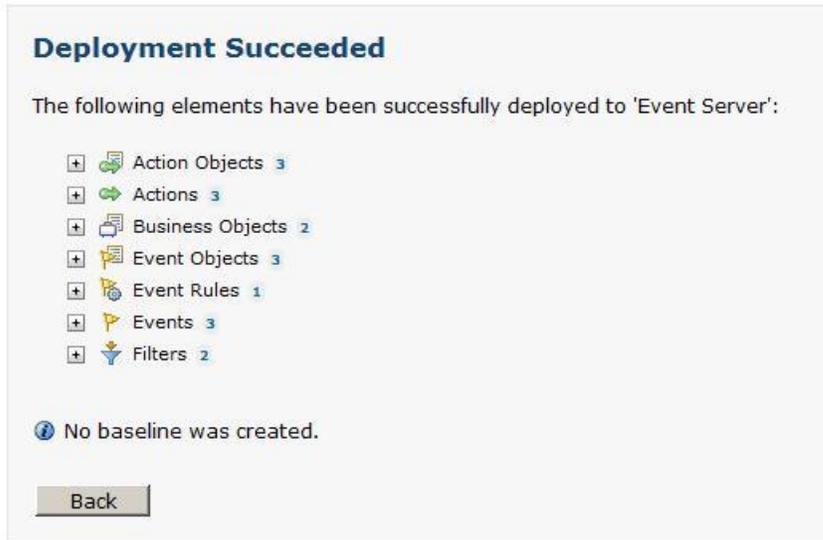
- __2. You are now presented with some deployment options. You can choose a Query to apply to the deployment as well as select what event runtime to deploy to. Further, you have the option to create a baseline of the runtime version of the project. For this lab, un-check the **Create a baseline** checkbox and click the **OK** button.



- __3. You should now see a progress screen like the following:



- ___4. A few moments later you should see a confirmation screen indicating the deployment was successful.



You have now successfully completed the second lab in this series. Log out of Decision Center and close the browser. We will now test our new event project.

1.3 Exploring Business Space

Business Space is a Web 2.0 mash up environment that allows for various capabilities for end users.



This task should take you about 50 to 60 minutes to complete.

- Step 1: Log into Business Space
- Step 2: Event simulation and testing
- Step 3: Event capture and replay
- Step 4: Visibility with Dashboards

1.3.1 Log into Business Space

**Note:**

If you are logged into Decision Center from the previous lab, log out of Decision Center and close the browser before proceeding.

Once the project has been deployed (either through Event Designer or Decision Center) we can easily test the project using the Event Testing Widget in Business Space.

To log into Business Space:

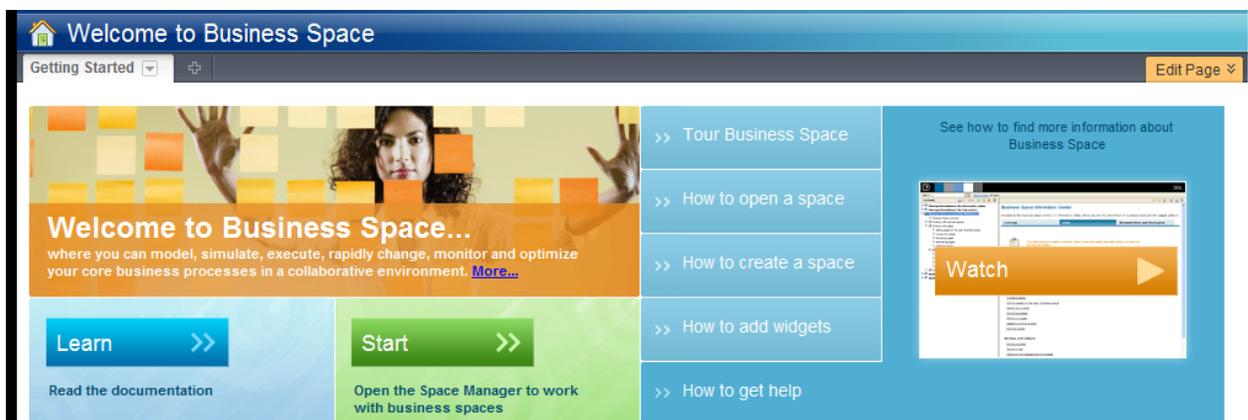
- __1. Open Firefox and navigate to the URL:

`http://localhost:9081/mum/resources/bootstrap/login.jsp`

- __2. Log into Business Space by entering the username and password of “admin” and clicking the **Login** button.



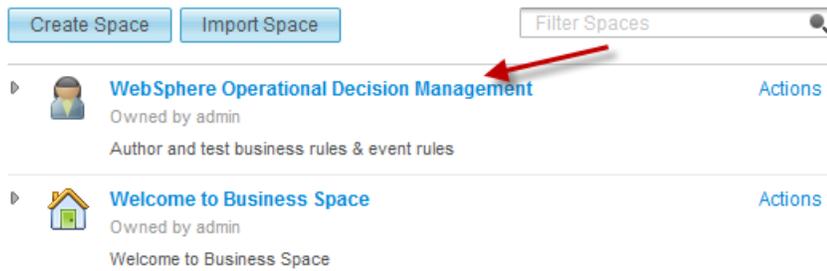
- __3. If the Welcome Screen (below) appears, we need to add the WODM Events space to the environment. If the WODM Events space appears, skip this step.



- __a. Click the **Manage Spaces** link.



- __b. Click the title of the space **WebSphere Operational Decision Management**.



- __4. You should now see a page that has a title like the following:



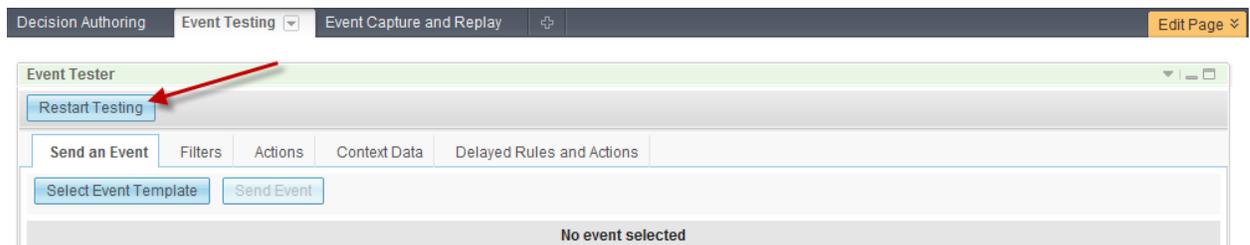
1.3.2 Event simulation and testing

Once the project has been deployed (either through Event Designer or Decision Center) we can easily test the project using the Event Testing Widget in Business Space.

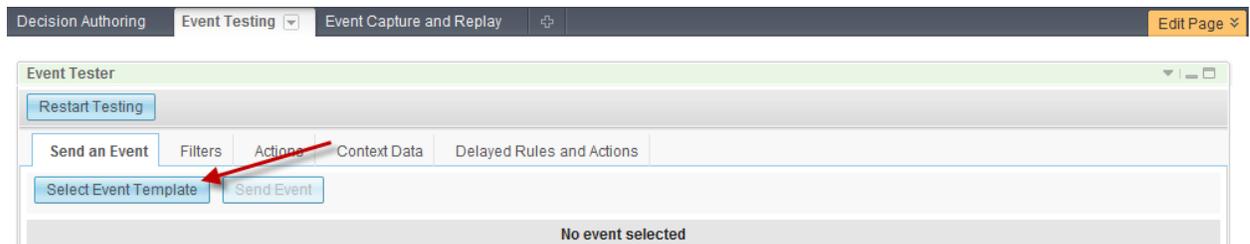
- __1. Click on the **Event Testing** tab in Business Space to open the Testing widget.



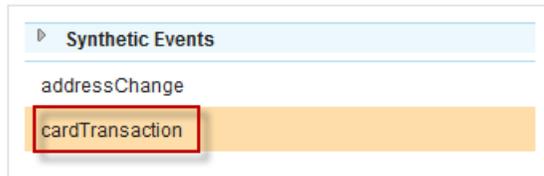
- __2. Click the **Restart Testing** button in order to clear any existing history data.



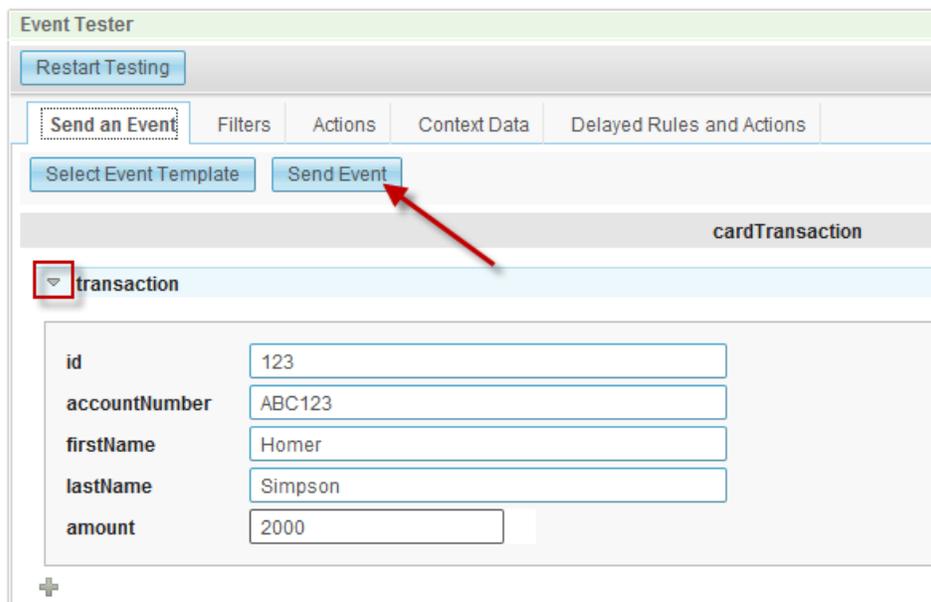
- __3. Now click the **Select Event Template** in order to choose the Event we will generate manually



- __4. Select the Event **cardTransaction** and click the **OK** button.



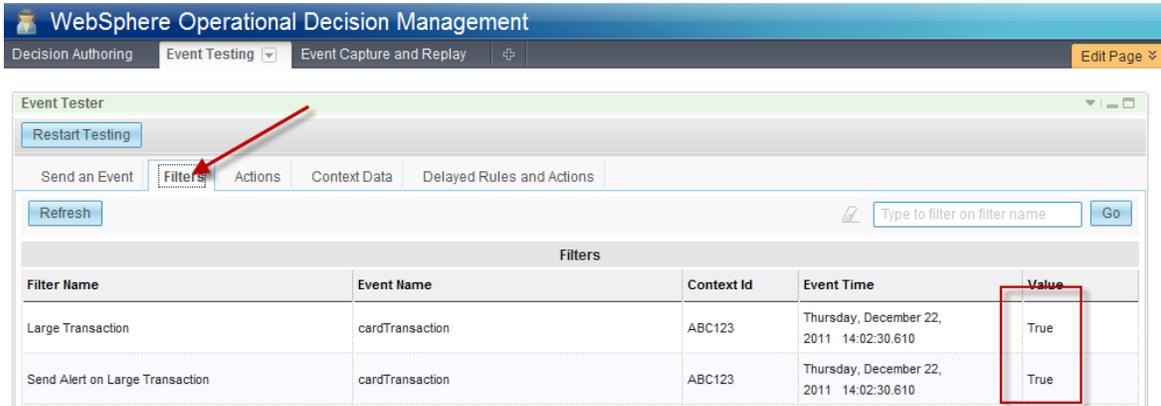
- __5. Click the triangle twisty next to the **transaction** title and enter the values accordingly. Note – these can be any values you want but be sure to enter an amount greater than “1000” in order for the rule to fulfill the condition created in the previous section and generate the action. When the values are entered, click the **Send Event** button.



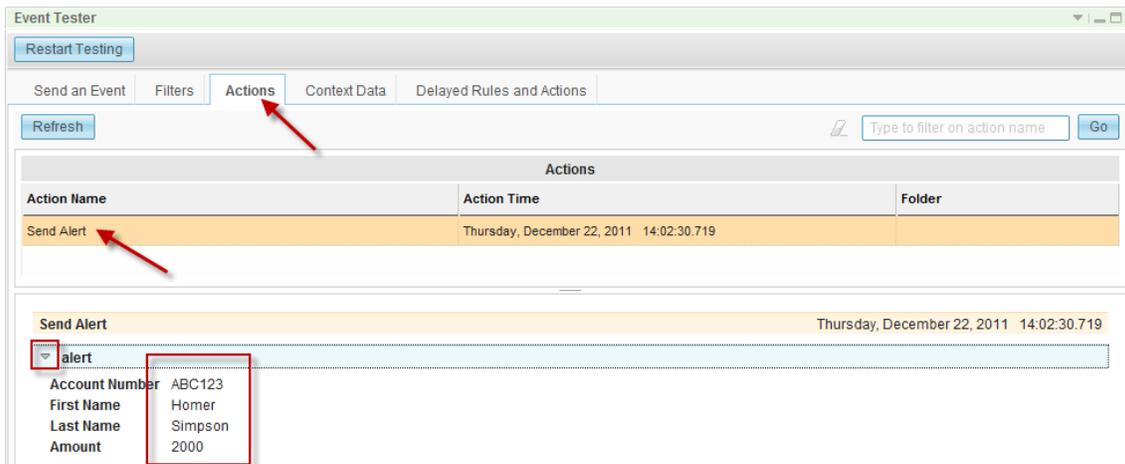
- __6. The following text (or something similar) should appear at the bottom of the widget:

Event 'cardTransaction' sent successfully at 2:13:46 PM

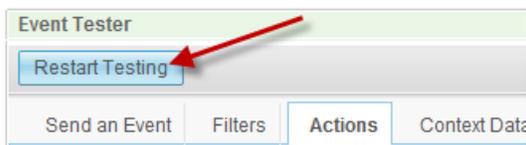
- ___7. Now click on the **Filters** tab within the Event Tester widget. Two entries should have been created for the evaluation of this event instance, each with a result of “True”. One entry is for the Filter evaluation and the other is for the overall evaluation of the Event Rule (since an Event Rule may have logic built directly into it).



- ___8. Now click the **Actions** tab in the Event Tester widget. An entry should have been created for the execution of this action. Click on the entry and click the triangle twisty next to the **alert** title that appears at the bottom of the widget. You should be able to verify that all the values came through successfully.



- ___9. Now that we have tested the new Event Rule we can now optionally clean up any historical data by clicking the **Restart Testing** button at the top of the Event Tester widget.



1.3.3 Event capture and replay

Simulating Events one at a time is very useful, but may not fulfill all of the testing and validation needed for a project. Business Space also offers the capability to capture or “record” Events as they are

happening and then replay them over and over again in a time compression. In other words, you do not need to wait an entire day for a full day's worth of Events to be replayed.

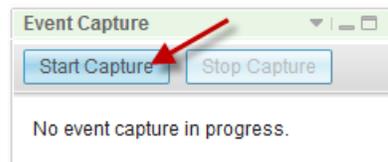
This also gives the ability to export or import the recorded events into an alternate runtime so that users can test events recorded in other environments. This is especially useful for testing the impact and validating the Event Rules against real Events that have been captured from the production system (even if that production environment does not yet have any Event Rules associated with it yet).

To capture and replay Events:

- __1. Click on the **Event Capture and Replay** tab in Business Space to open the Event Capture and Replay widget.



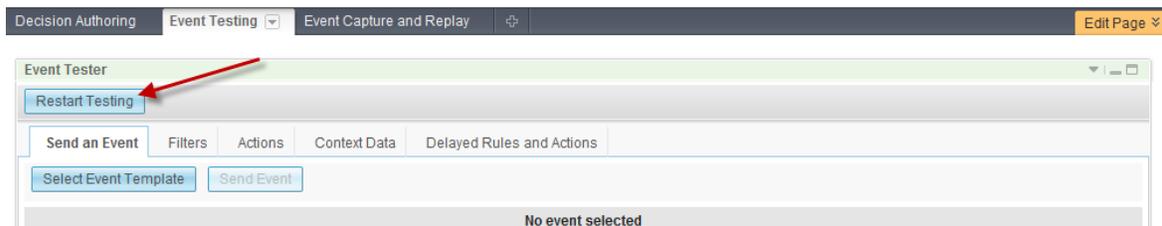
- __2. Click the **Start Capture** button in the Event Capture widget.



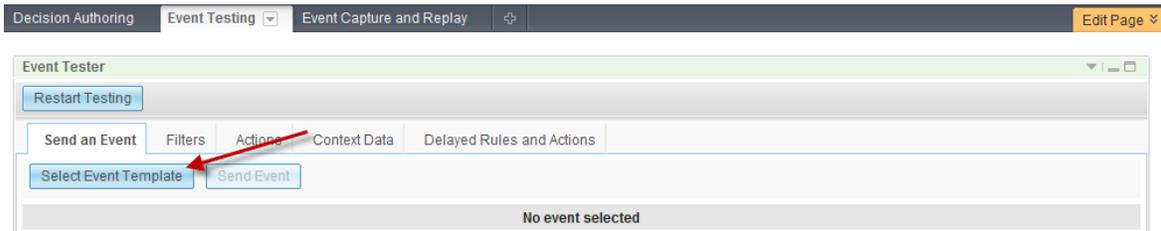
- __3. We will now generate some Events to record. Click on the **Event Testing** tab in Business Space to open the Testing widget.



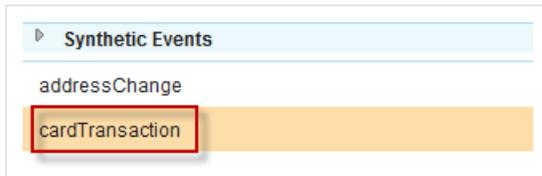
- __4. Click the **Restart Testing** button in order to clear any existing history data.



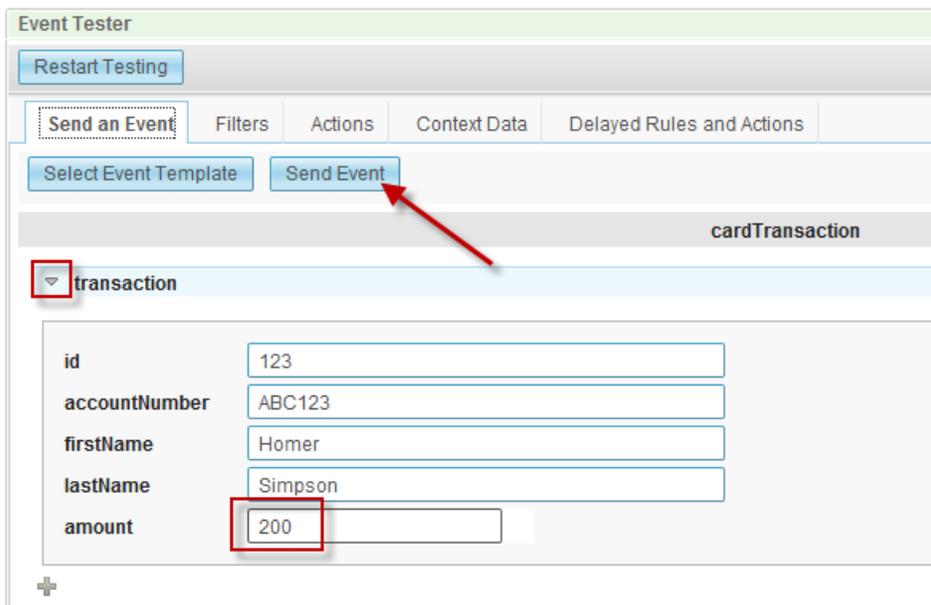
- __5. If the **cardTransaction** Event is not yet selected, click the **Select Event Template** in order to choose the Event we will generate manually



- __6. Select the Event **cardTransaction** and click the **OK** button.

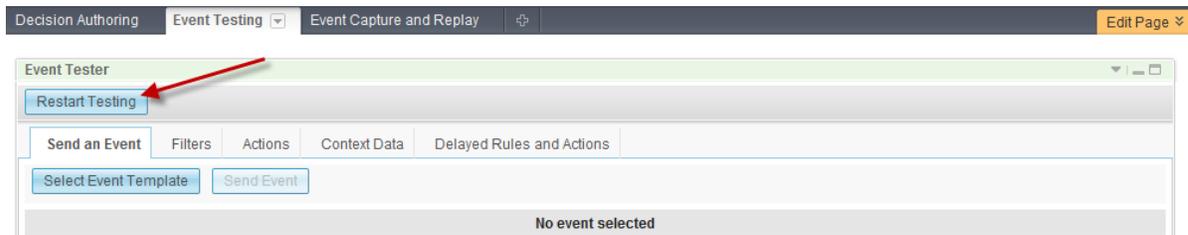


- __7. Enter the Event data – but in this case enter an **amount** that *will not* trigger the Event Rule (make it less than “1000”). When the data is entered, click the **Send Event** button.



- __8. Repeat the previous step three or four more times and with the last event, make the **amount** field greater than “1000”.

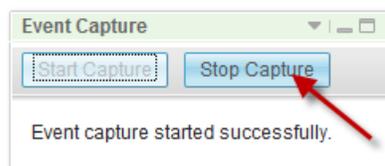
- __9. Since these Events were processed, we want to clear out the history before replaying them from the Event Capture and Replay widget. Click the **Restart Testing** button to clear the historical data.



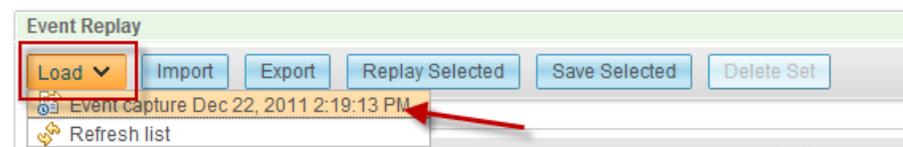
- __10. Return to the Event Capture and Replay widget by clicking the **Event Capture and Replay** tab.



- __11. Click the **Stop Capture** button in the Event Capture widget to stop the recording.



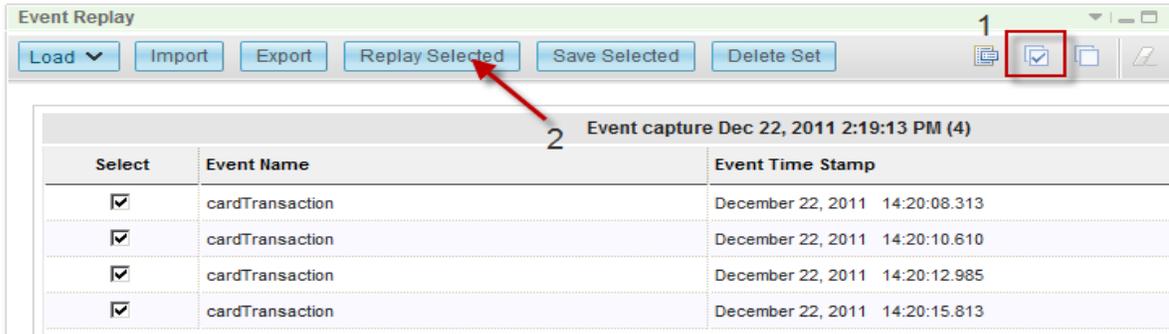
- __12. Click the **Load** button in the Event Replay widget and select the new event capture set.



Note:

You may need to select **Refresh list** and click the **Load** button again for the new list to appear.

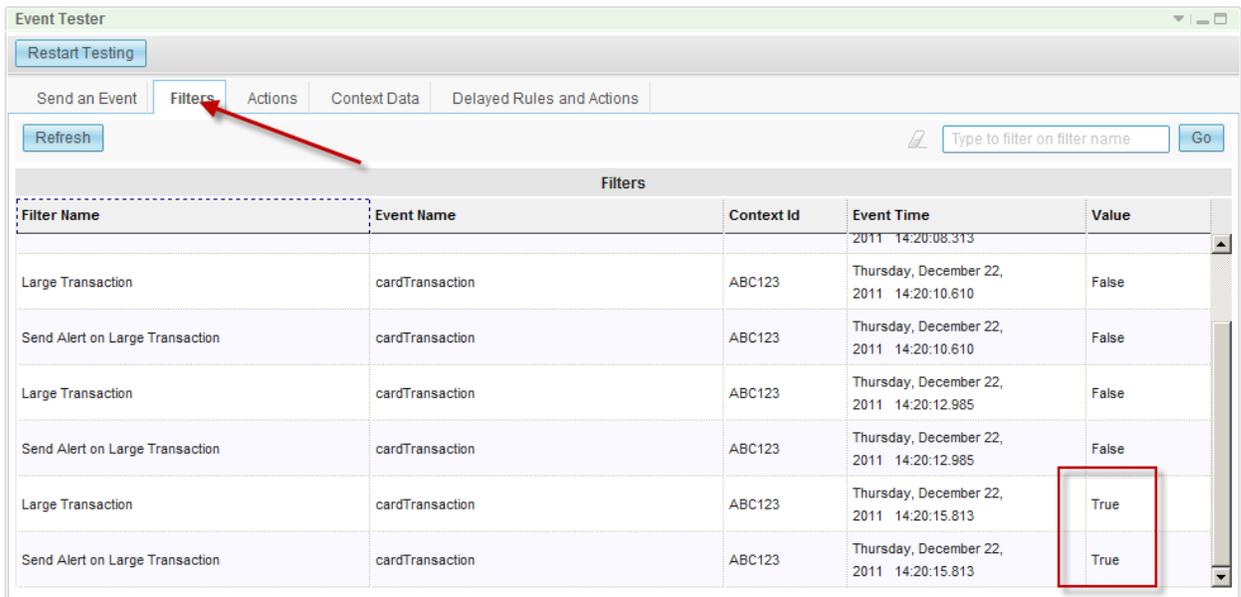
- ___13. Select all of the Events by clicking each checkbox individually or clicking the **Select All** button at the top-right of the widget (1). Then click the **Replay Selected** button (2) to replay the events.



- ___14. Now, go back to the Testing widget by clicking the **Testing** tab.



- ___15. Click on the **Filters** tab to see all of the evaluations from the replayed Events. The last two evaluations should read "True".



- ___16. You can now replay these Events over and over again (even with different Event Rules) to test the logic. Simply click the **Restart Testing** button in the Tester, and then replay the Events from the Event Replay widget after deploying a new project.

1.3.4 Visibility with Dashboards

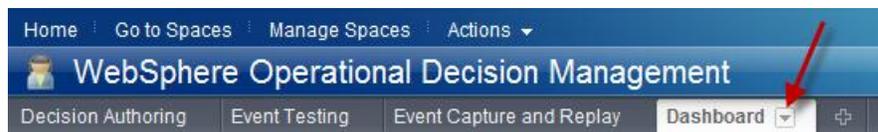
Charts and graphs are a very useful method for exposing some of the runtime information out to end users for better visibility and understanding.

Because a page for the Events Dashboard may not have been created in the current Business Space environment, this exercise will also illustrate how a user can customize Business Space.

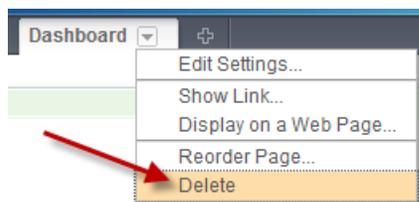
__1. Add a new page to Business Space for the Dashboard.

__a. If the Dashboard tab already exists, you should delete it before proceeding to the next step. If the Dashboard tab does not exist, continue to the next step (b).

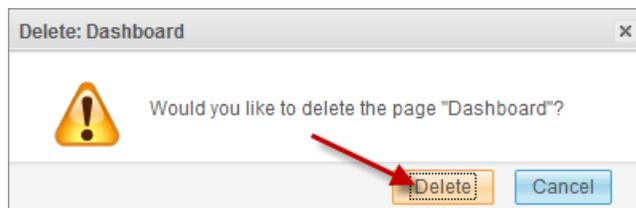
__i. Click the down arrow button in the Dashboard tab.



__ii. Click the **Delete** option in the menu to delete the tab.



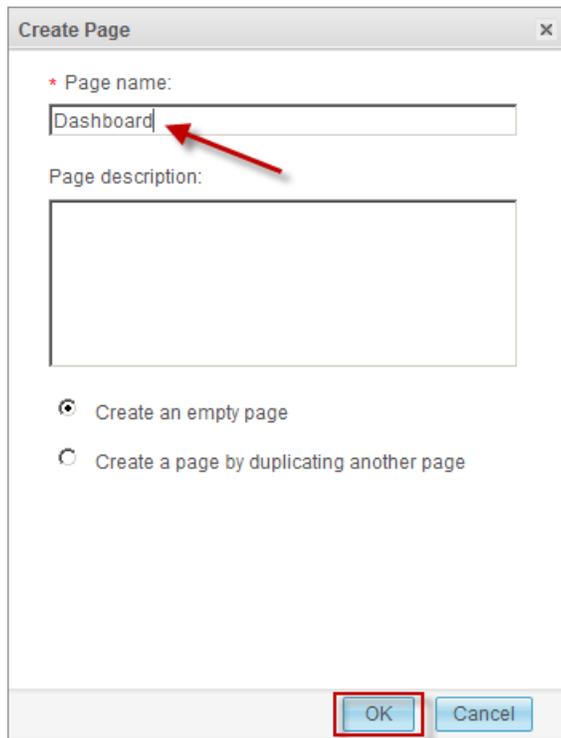
__iii. In the confirmation window, click the **Delete** button.



__b. Click the  button next to the tabs in Business Space to add a new page.



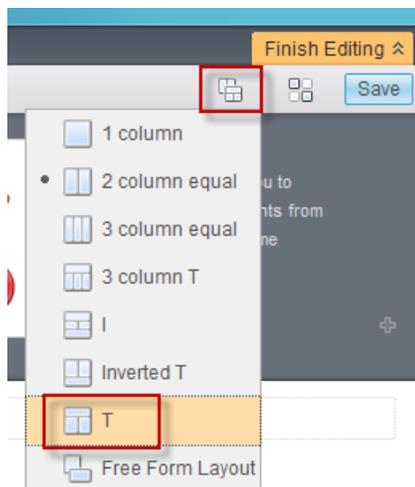
__c. Enter “Dashboard” for the page name and click the **OK** button.



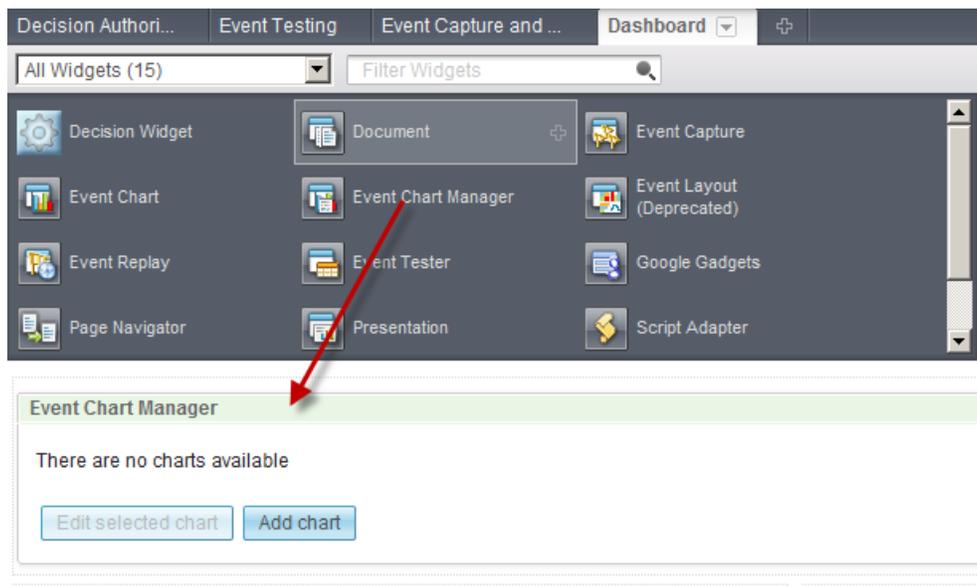
__d. Click the **Edit Page** button.



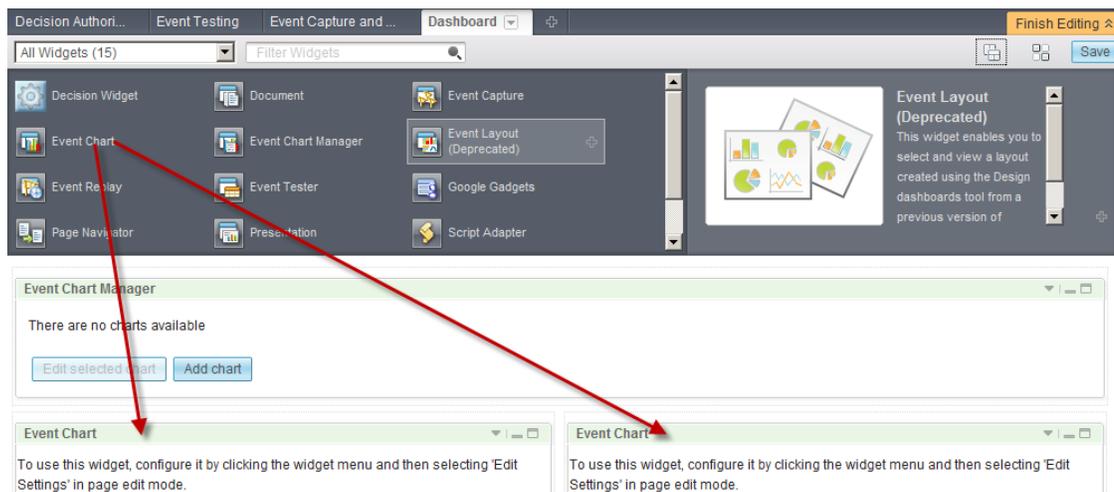
__e. Click the “Change Layout” icon in the toolbar on the right and select the **T** layout.



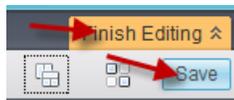
- __f. Now drag the **Event Chart Manager** widget into the empty space in the top of the page.



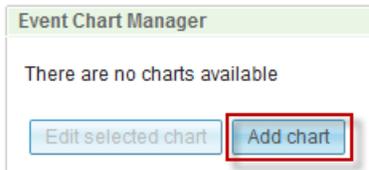
- __g. We will now repeat the previous step to drag the Event Chart widget to the two lower panes of the “T”.



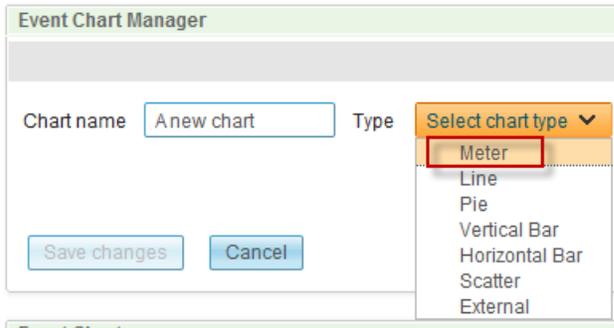
- __h. Click the **Save** button and then the **Finish Editing** button.



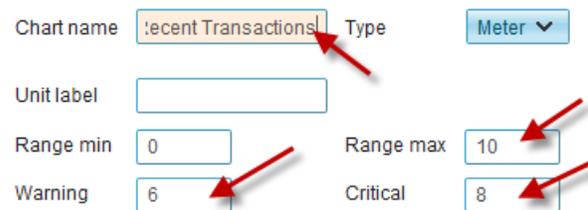
__2. In the new Event Chart Manager widget, click the **Add Chart** button.



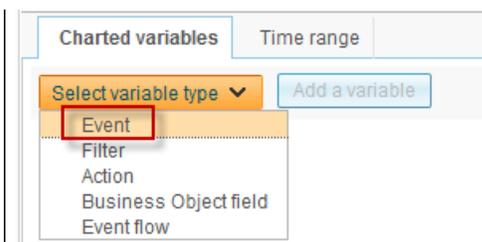
__3. Click the **Select chart type** drop-down button and select **Meter**.



__4. Enter "Recent Transactions" as the name of the new chart and change the values of Range Max, Warning, and Critical to "10", "6", and "8", respectively.



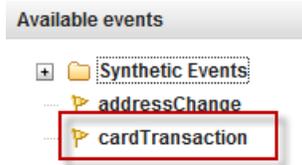
__5. Click the **Select variable type** drop-down button in the Charted variables tab and select **Event**.



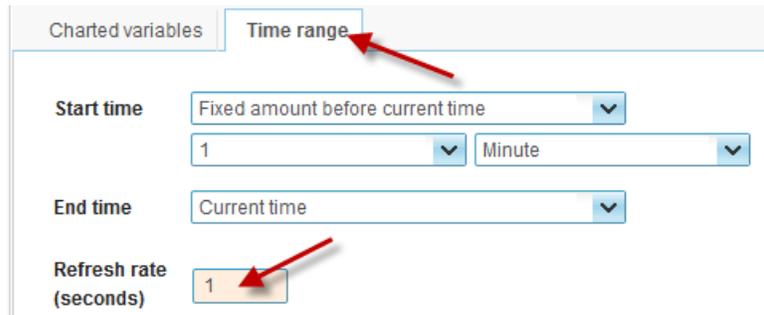
__6. Click the **Add a variable** button.



__7. In the window that appears, select the **cardTransaction** Event.



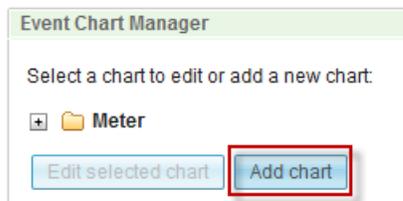
__8. Click the **Time range** tab and change the refresh rate to “1”.



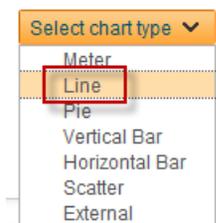
__9. Click the **Save changes** button.



__10. In the Event Chart Manager widget, click the **Add chart** button.



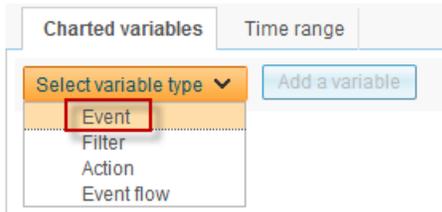
__11. Click the **Select chart type** button and select **Line**.



__12. Enter “Recent Events” as the name of the new chart.



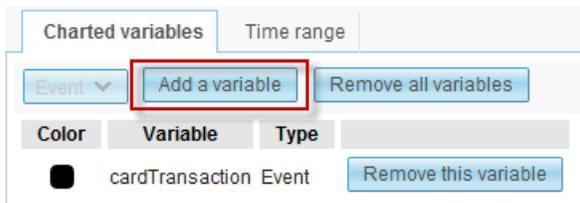
__13. Click the **Select variable type** drop-down button and choose **Event**.



__14. Click the **Add a variable** button and select the **cardTransaction** Event.



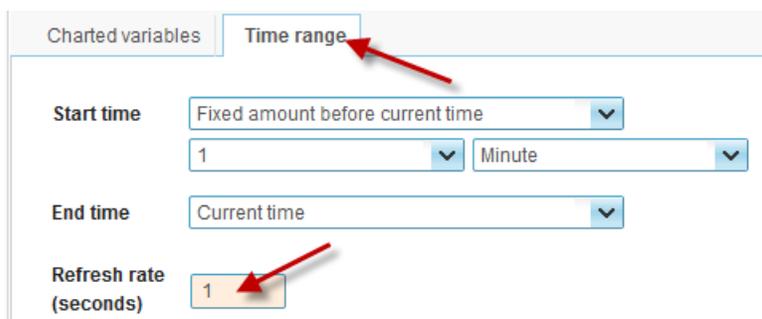
__15. Click the **Add a variable** button again and select **addressChange**.



__16. Click the black color box next to each of the variables and choose a different color for the line.



__17. Click the **Time range** tab and change the refresh rate to "1".



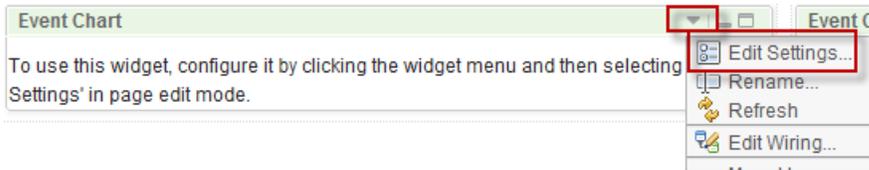
__18. Click the **Save changes** button.



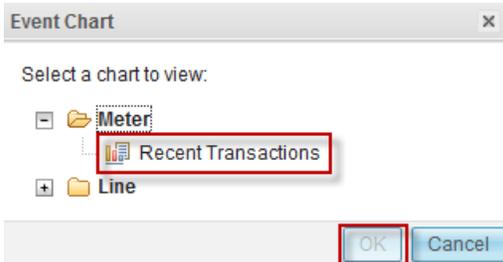
__19. Click the **Edit Page** button at the top-right of the screen.



__20. In the Event Chart widget on the left, click the down-arrow and select **Edit Settings...**

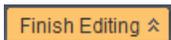


__21. In the window that appears, expand the Meter folder, select **Recent Transactions** and click the **OK** button.

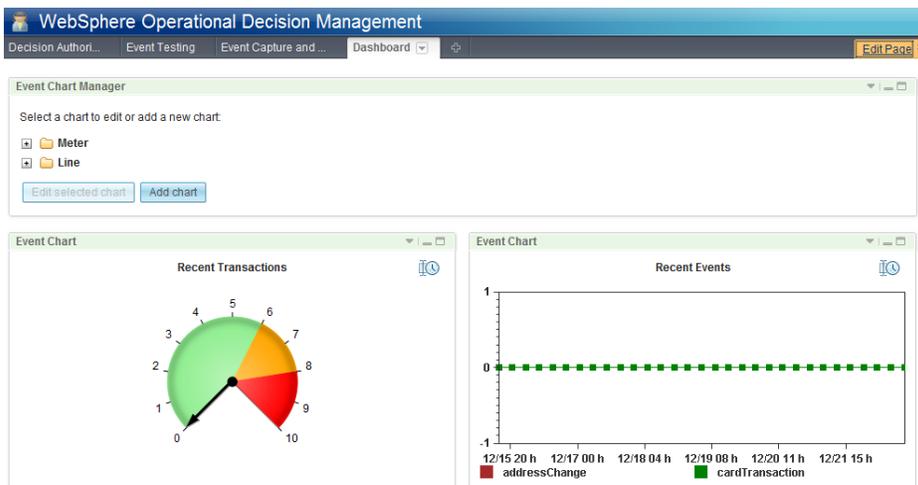


__22. Repeat the previous two steps for the widget on the right to select the Recent Events line chart.

__23. Click the **Finish Editing** button.



__24. The page should now look something like this:

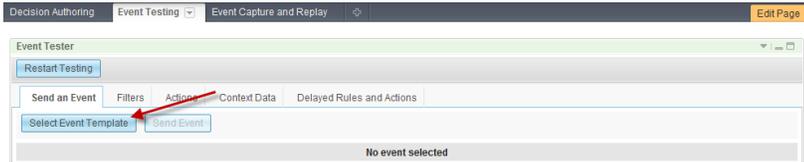


__25. Test the charts

__a. Go to the Testing widget by clicking the **Event Testing** tab.



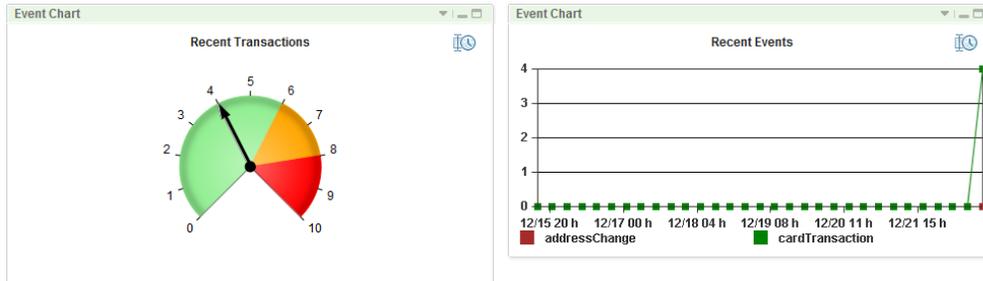
- __b. If the **cardTransaction** Event is not yet selected, click the **Select Event Template** in order to choose the Event we will generate manually and select **cardTransaction**.



- __c. Enter the Event data – the values do not make a difference for this test.
- __d. Repeat the previous step three or four more times so that there will be a few Events visible in the charts.
- __e. Return to the charts by clicking the **Dashboard** tab.



- __f. The charts should appear to look something like this:



- __26. Log out of Business Space.



You have now successfully completed the third lab in this series.

1.4 Asset Governance in Decision Center

Decision Center has very powerful capabilities in the area of governance. In this lab we will explore the design-time “Branch and Merge” feature as well as semantic queries.



This task should take you about 30 minutes to complete.

- Step 1: Log into Decision Center Console
- Step 2: Create a Subbranch
- Step 3: Modify an Event Rule
- Step 4: Merge branches
- Step 5: Create and run a new Query

1.4.1 Log into Decision Center Console

To log into Decision Center Console:



Note:

If you are logged into Business Space from the previous lab, log out of Business Space and close the browser before proceeding.

__1. Navigate to the Decision Center Console URL:

`http://localhost:9081/teamserver`

__2. Sign in to Decision Center using the following details:

Username: rtsUser1

Password: rtsUser1

Note: Decision Center can handle different user profiles. Here you sign in as a regular business user.

__3. On the Decision Center **Home** tab, in the **Project in use** field, select **Banking Events**. Note that the Branch in use should default to “main”.

Welcome to the Decision Center Home Page

Project in use: Banking Events

Branch in use: main

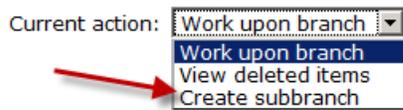
Current action: Work upon branch

1.4.2 Create a Subbranch

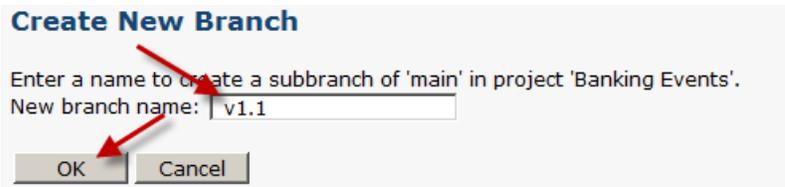
Subbranches are very important for design-time versioning in Decision Center. Users may work on various versions or copies of projects simultaneously and then later visually merge changes back together as needed.

To create a subbranch:

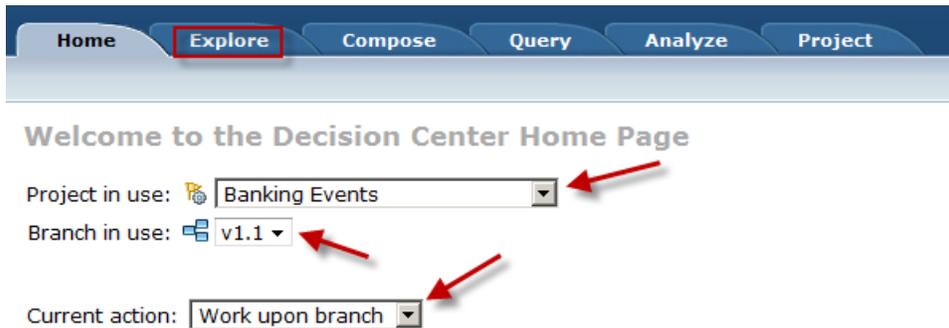
- __1. Under the **Current action** field within the **Home** tab, choose **Create a subbranch**.



- __2. In the next screen enter a name for the new subbranch (does not need to match the one in the screenshot below) and click **OK**.



- __3. Make sure the **Banking Events** project is still selected, that the new branch is selected in the **Branch in use** field, and the **Current action** is **Work upon branch**. Now click the **Explore** tab.

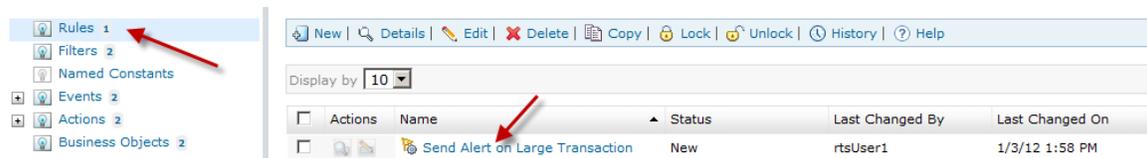


1.4.3 Modify an existing Event Rule

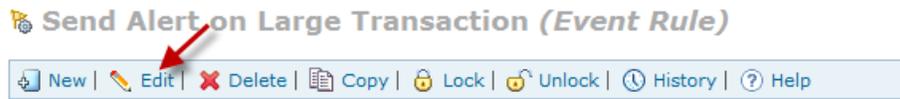
We will now change the rule that we created earlier. Since we are in a new branch, the changes will not impact anything in the previous “main” branch until we decide to merge the changes together.

To modify an existing Event Rule:

- __1. Make sure that **Rules** item is selected in the Smart Folders view and click on the Event Rule you created in the previous lab.



- __2. Click the **Edit** button in the Event Rule toolbar.



Note:

Alternatively to these two steps, you could also check the box next to the Event Rule and click the **Edit** button on the first screen.

- __3. On the screen that appears, click the **Next** button to proceed with editing the Event Rule.

Properties

Name*	<input type="text" value="Send Alert on Large Transaction"/>
Status*	<input type="text" value="New"/>
Expiration Date	<input type="text"/>
Effective Date	<input type="text"/>
Folder	<input type="text" value="/"/>
Group	<input type="text" value="<none>"/>

- __4. Modify the Event Rule in some way. In the example below, a new condition has been added to make sure that an alert has not already been sent for this account number.

```

if
  large transaction
and
  past occurrences of send alert within 1 days is 0
then
  send alert with "Large Transaction" ;

```

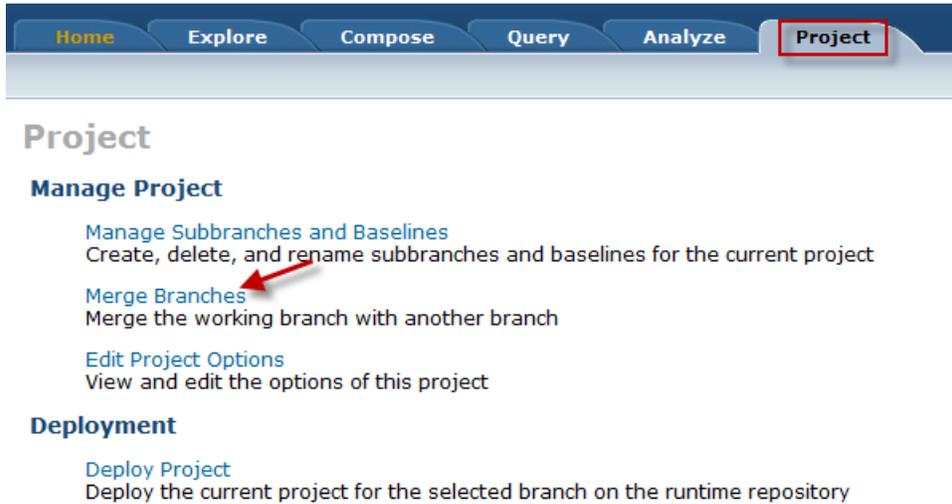
- __5. Click the **Finish** button to save the Event Rule.

1.4.4 Merge branches

We will now merge the changes into the rule that we created earlier.

To merge branches:

- ___1. Click the **Project** tab and click the link **Merge Branches**.

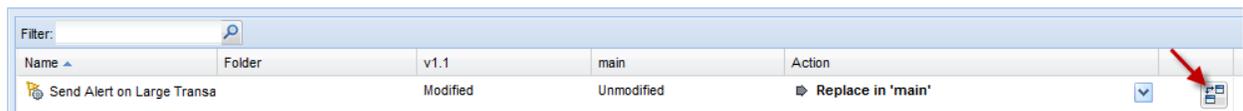


- ___2. Note that at the top right of the Decision Center screen it shows you what branch you are currently working on. This screen gives the option to choose a branch to merge the project into. In this project, there is only one other branch (“main”) so make sure that is selected and click **Next**.

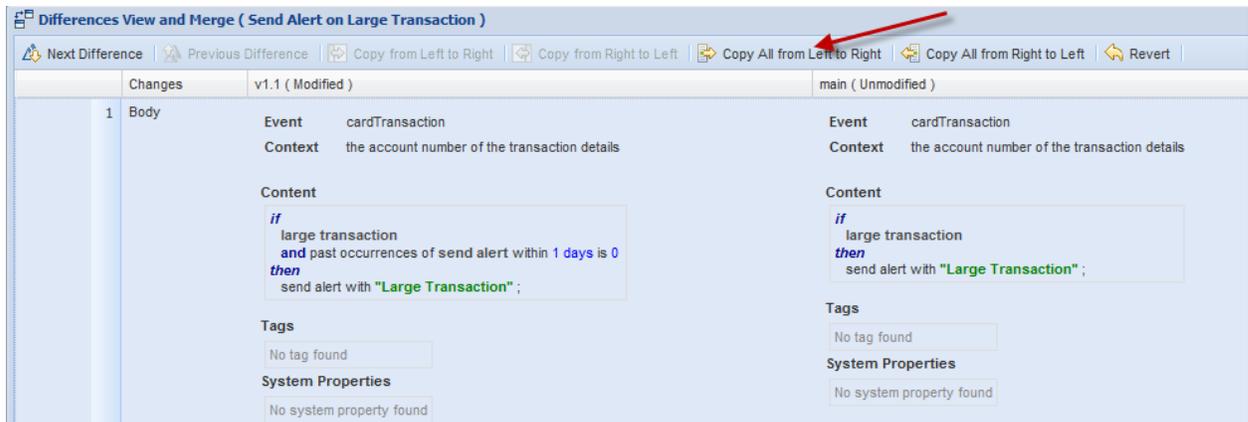


- ___3. After a few moments you will then see a screen showing all of the differences between the branches. This also gives you the option to apply a single action to the differences (“Bidirectionally”, “Only to ‘main’ branch” or “Only to ‘v1.1’ branch”). However, a key capability in Decision Center is the ability to not only check for changes and differences but to *visually* compare these differences and individually choose what to do with them.

Click on the  button in the table to open the visual compare screen.



- ___4. Here you see the Event Rule in its entirety and we can decide what we want to do with the differences. For example, we can click the **Copy All from Left to Right** button to push the newly modified rule to the “main” branch as well.



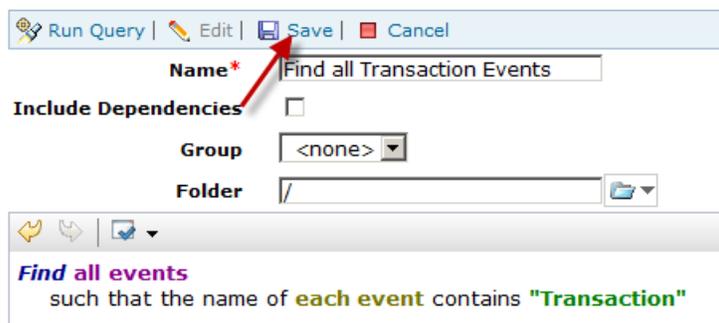
1.4.5 Create and run a new Query

Queries are excellent ways of managing and finding assets in Decision Center. As projects grow, it often becomes very complicated to track and understand all of the various assets that exist in the project. In this lab you will learn how to create a simple Query and run it.

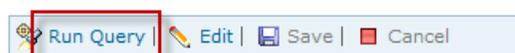
- __1. Click the **Query** tab to open the Query Editor screen.



- __2. Create a query like the following (this will find all events that contain the word "Transaction" in the name). Note that the same type of contextual editor menus appear as they do when creating Event Rules and Filters. When finished, click the **Save** button.



- __3. Once the Query is saved, click the **Run Query** button in the toolbar.



__4. You should two of the Events in the project appear in the results table.

Display by 10				
<input type="checkbox"/>	Actions	Name	Last Changed By	Last Changed On
<input type="checkbox"/>		Large Transaction	admin	1/2/12 11:41 PM
<input type="checkbox"/>		cardTransaction	admin	1/2/12 11:41 PM

You have now successfully completed the fourth lab in this series.

1.5 Expand the Project (Optional)

Now that we have touched on the various aspects of the end-user environment, it is now possible to use what we have learned to create new Event Rules and Filters in Decision Center and test them in Business Space.



This task should take you about 20 to 30 minutes to complete.

- Step 1: Log into Decision Center Console
- Step 2: Create a new Event Rule
- Step 3: Deploy the modified project
- Step 4: Log into Business Space
- Step 5: Test the project in Business Space

1.5.1 Log into Decision Center Console

To log into Decision Center Console:



Note:

If you are still logged in to Decision Center from the previous lab you can skip to step 1.5.3.

__1. Navigate to the Decision Center Console URL:

`http://localhost:9081/teamservice`

__2. Sign in to Decision Center using the following details:

Username: rtsUser1

Password: rtsUser1

Note: Decision Center can handle different user profiles. Here you sign in as a regular business user.

- __3. On the Decision Center **Home** tab, in the **Project in use** field, select **Banking Events**.

1.5.2 Create a new Event Rule

We now want to add additional logic to our existing application. This part should be fairly open ended but the lab will give some suggestions on possible Event Rules that could be added for this project.

To create an Event Rule:

- __1. Navigate to the composing area by clicking the **Compose** tab.



- __2. Select the type **Event Rule** on the left and click the **OK** button.



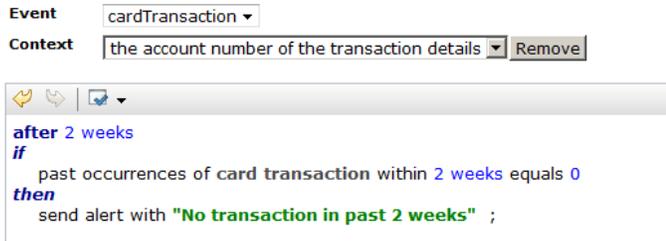
- __3. Enter a name for the new Event Rule and click the **Next** button.

- __4. We will now set the Event, the Context and the content of the Event Rule. Below are some possible suggestions for some new Event Rules (although feel free to create one or more on your own):

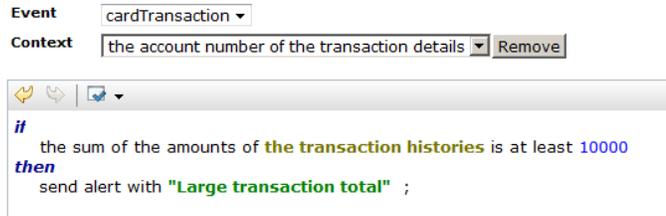
- Start Investigation after many address changes.



- Send alert if more than 2 weeks with no card transaction (use 1 minute for testing purposes).



- Send alert if the sum of transaction amounts are greater than 10,000.



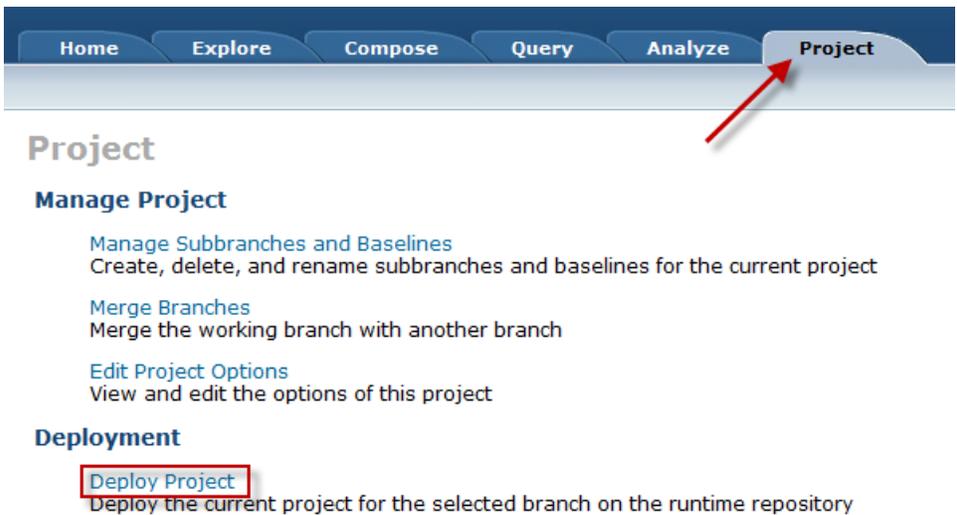
- __5. Click the **Finish** button.
- __6. You should now see a screen confirming the creation of the Event Rule.

1.5.3 Deploy the modified project

As you make changes in Decision Center, you should continually deploy and test the changes. Because a new project deployment does not require any compiling or restarting of the server, it is very easy to incrementally deploy and test projects as they are developed.

To deploy the project:

- __1. Navigate to the project area by clicking the **Project** tab and click the **Deploy Project** link.



- __2. You are now presented with some deployment options. You can choose a Query to apply to the deployment as well as select what event runtime to deploy to. Further, you have the option to create a baseline of the runtime version of the project. For this lab, un-check the **Create a baseline** checkbox and click the **OK** button.



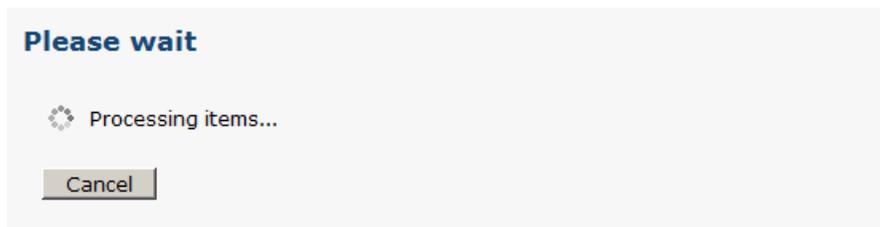
Deploy Project

Query

Server*

Create a baseline for this deployment 2011-12-22 13:16:25 MST

- __3. You should now see a progress screen like the following:



Please wait

 Processing items...

- __4. A few moments later you should see a confirmation screen indicating the deployment was successful.
- __5. Log out of Decision Center and close the browser.

1.5.4 Log into Business Space



Note:

If you are logged into Decision Center from the previous lab, log out of Decision Center and close the browser before proceeding.

Once the project has been deployed (either through Event Designer or Decision Center) we can easily test the project using the Event Testing Widget in Business Space.

To log into Business Space:

- __1. Open Firefox and navigate to the URL:
- `http://localhost:9081/mum/resources/bootstrap/login.jsp`
- __2. Log into Business Space by entering the username and password of “admin” and clicking the **Login** button.

__3. You should now see a page that has a title like the following:



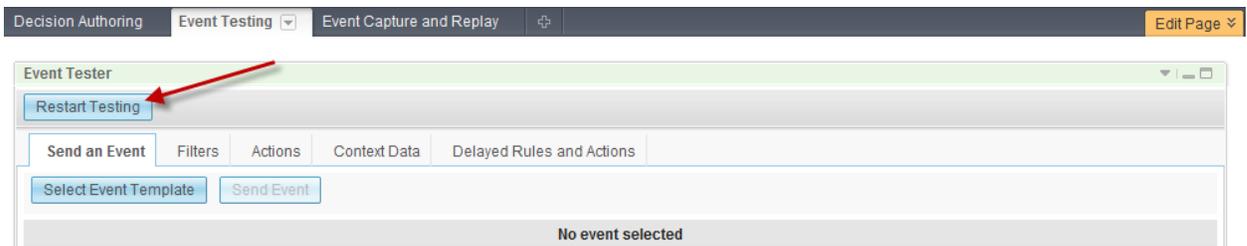
1.5.5 Test the project in Business Space

Once the project has been deployed (either through Event Designer or Decision Center) we can easily test the project using the Event Testing Widget in Business Space.

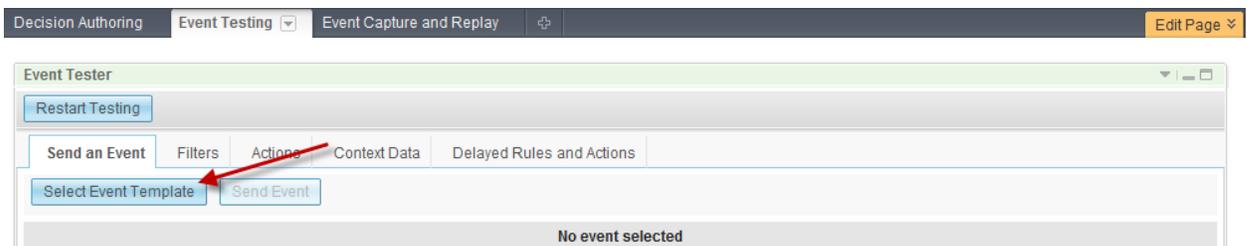
__1. Click on the **Event Testing** tab in Business Space to open the Testing widget.



__2. Click the **Restart Testing** button in order to clear any existing history data.



__3. Now click the **Select Event Template** in order to choose the Event we will generate manually



__4. Select the Event that will trigger your new Event Rule(s) and click the **OK** button.

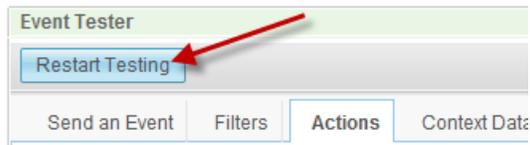
__5. Click the triangle twisty next to the Action Object title and enter the values accordingly. When the values are entered, click the **Send Event** button.

__6. The following text (or something similar) should appear at the bottom of the widget:

Event 'cardTransaction' sent successfully at 2:13:46 PM

__7. Now click on the **Filters** tab within the Event Tester widget. You should see your new Event Rule(s) evaluated and the outcome.

- __8. If any of the Event Rules were “True”, click the **Actions** tab in the Event Tester widget. An entry should have been created for the execution of this action. Click on the entry and click the triangle twisty at the bottom to verify that all the values came through successfully.
- __9. Now that we have tested the new Event Rule we can now optionally clean up any historical data by clicking the **Restart Testing** button at the top of the Event Tester widget.



- __10. Log out of Business Space and close the browser.

You have now successfully completed the fifth lab in this series.

Summary

In this lab you used Decision Center to perform the following business analyst tasks:

- Introduction to Decision Center
- Created a new Filter and Event Rule
- Deployed a project to the runtime
- Explored Business Space capabilities
 - Event Simulation and Testing
 - Event Capture and Replay
 - Dashboards and Charts
- Introduced to governance capabilities in Decision Center
- Expanded the Event Project

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