Leading the **Integration** Revolution

Your business problems have changed.
Why hasn't your integration solution?

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Use Case: Publishing an orchestration as a REST API

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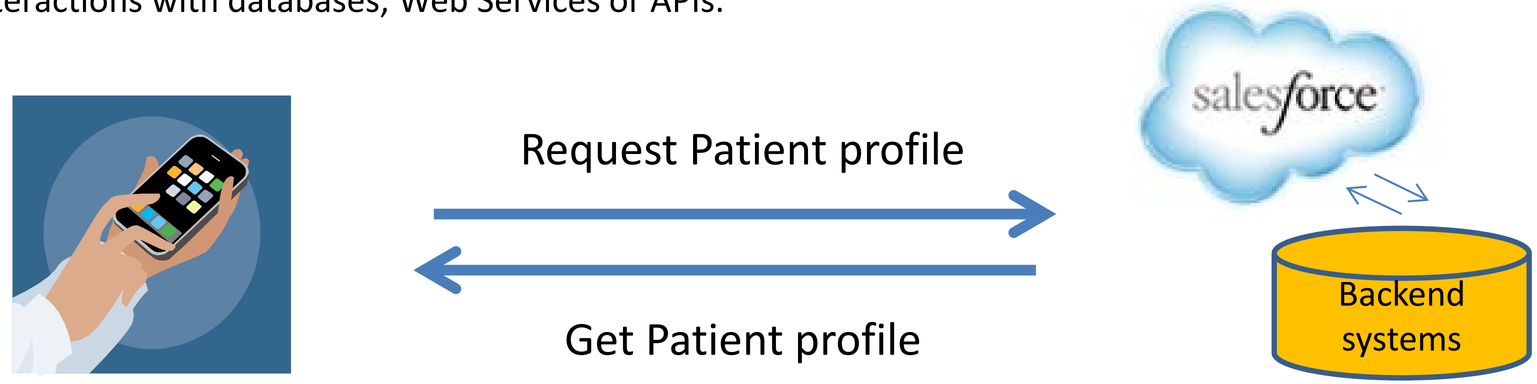
High-level scenario

Client sends a request via RESTful API to get a Patient profile by sending a Patient ID and receives a derived result back from a mashup of different services that are executed as part of an orchestration.

In this example the important service that is being executed in the orchestration is Salesforce SOAP Web Service which takes the incoming REST Request parameter and queries the matching account in Salesforce CRM and sends the result. You can add additional services such as pulling data from a database and other backend systems and merging them into the response. The result is sent back as a RESTful API response to the client.

Idea of providing a simple public-interfacing REST API allows your external clients to request and get data from your cloud and enterprise applications without having to go through the complexity of learning how to interact with these system's native APIs. Orchestrations published as a REST API can be used as a wrapper with simple methods that can be consumed by your external clients to interact with your applications. The orchestration would contain multiple system connections and data mappings needed to derive the result requested by the client.

Goal of this example is to use it as a working template to expand on your orchestration steps and include other system interactions with databases, Web Services or APIs.



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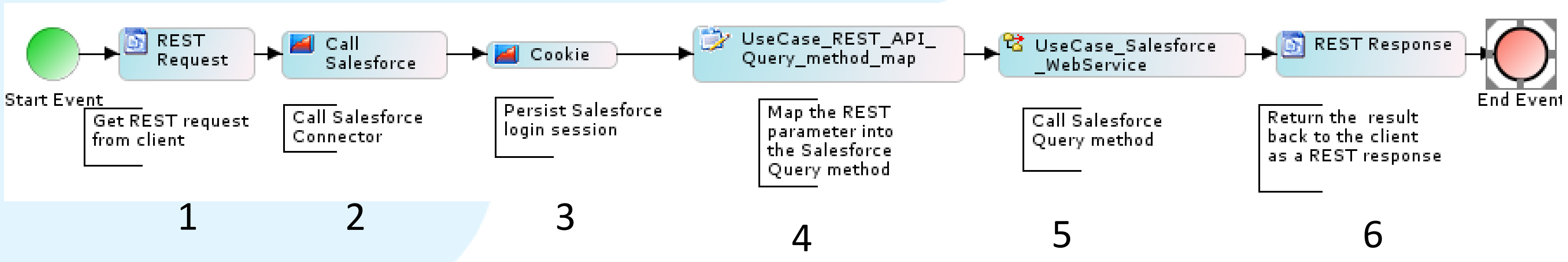
Technical design


Start Event
REST Request
Get REST request from client
1
Call Salesforce
Call Salesforce Connector
2
Cookie
Persist Salesforce login session
3
UseCase_REST_API_Query_method_map
Map the REST parameter into the Salesforce Query method
4
UseCase_Salesforce_WebService
Call Salesforce Query method
5
REST Response
Return the result back to the client as a REST response
6
End Event

For this orchestration we are going to call Salesforce when the process receives a REST request from the client. We have published the orchestration as a public facing REST API that can be called by any client application.

The orchestration has simple steps to login to Salesforce, find the Account that matches the Patient ID coming from the request and then returns the response back to the client. The response format can be in XML, JSON, text etc.

Description of the process design:
File event triggers the process flow on arrival of new or modified file.

1. "REST Request" is the HTTP REST Request that is sent by the client
2. "Call Salesforce connector" is a Call action that executes the Salesforce Connector subprocess flow
3. "Cookie" is a context variable that assigns the serverURL of the session to the Web Service activity (#5)
4. "REST_API_Query_method_map" is a mapping where we assign the incoming REST parameter value to the query
5. "Salesforce_WebService" is a Salesforce Web Service SOAP call that executes the Query method
6. "REST Response" returns the response from the Salesforce query back to the client as REST response (in XML)

Let’s run the REST API

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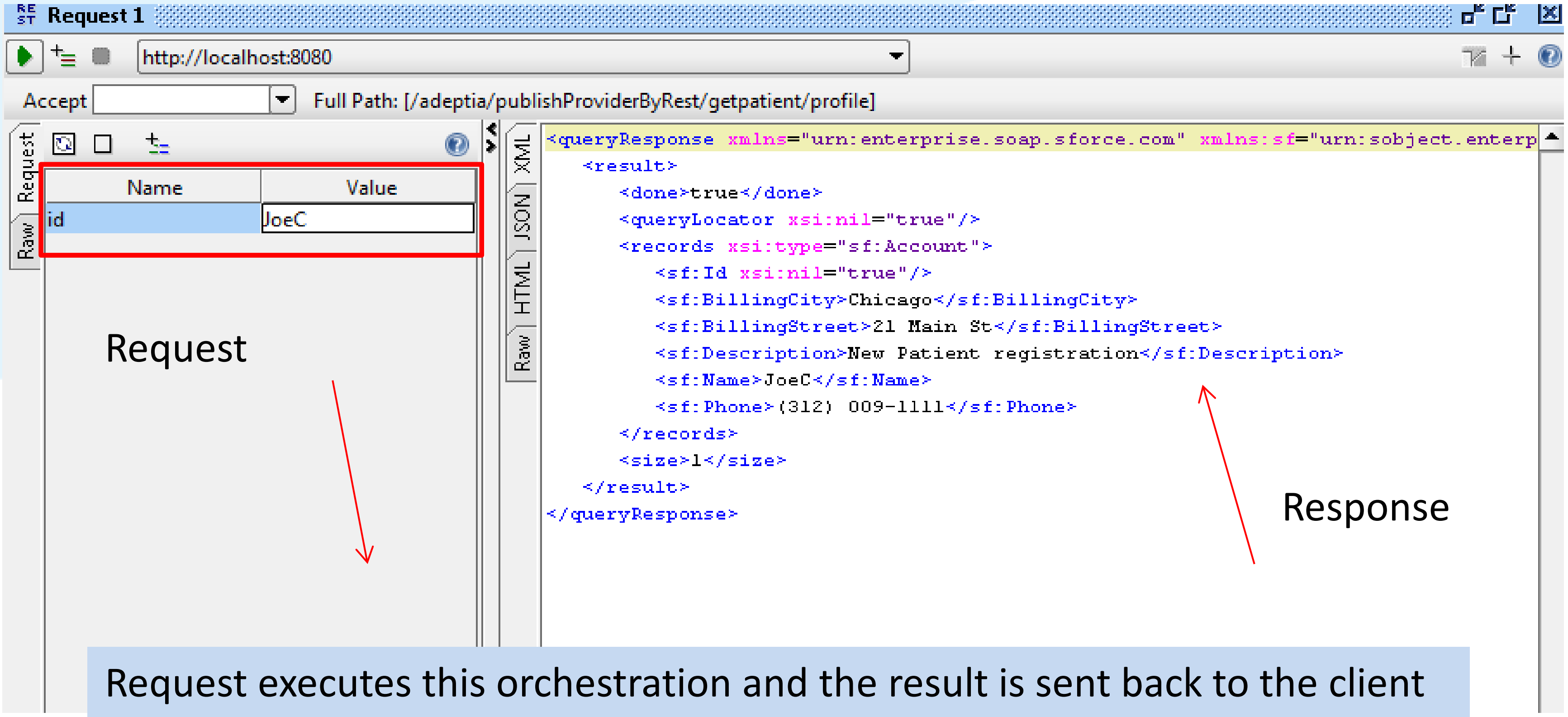
Run-time: Client calls REST API and gets the result



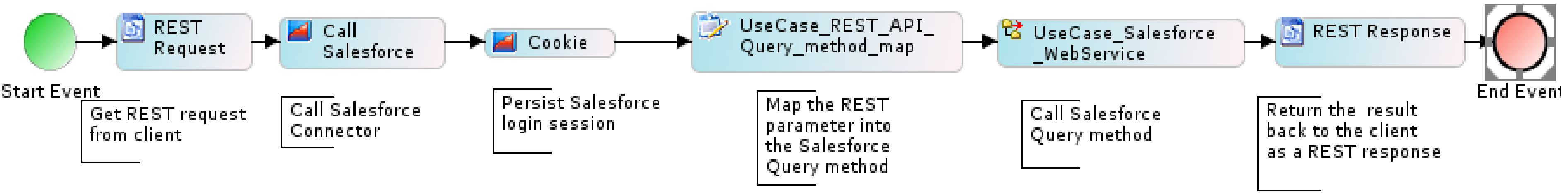
http://localhost:8080

Full Path: [/adeptia/publishProviderByRest/getpatient/profile]

Name	Value
id	JoeC

```
<queryResponse xmlns="urn:enterprise.soap.sforce.com" xmlns:sf="urn:sobject.enterp
   <result>
      <done>true</done>
      <queryLocator xsi:nil="true"/>
      <records xsi:type="sf:Account">
         <sf:Id xsi:nil="true"/>
         <sf:BillingCity>Chicago</sf:BillingCity>
         <sf:BillingStreet>21 Main St</sf:BillingStreet>
         <sf:Description>New Patient registration</sf:Description>
         <sf:Name>JoeC</sf:Name>
         <sf:Phone>(312) 009-1111</sf:Phone>
      </records>
      <size>1</size>
   </result>
</queryResponse>
```

Request executes this orchestration and the result is sent back to the client


Start Event
REST Request
Get REST request from client
Call Salesforce
Call Salesforce Connector
Cookie
Persist Salesforce login session
UseCase_REST_API_Query_method_map
Map the REST parameter into the Salesforce Query method
UseCase_Salesforce_WebService
Call Salesforce Query method
REST Response
Return the result back to the client as a REST response
End Event

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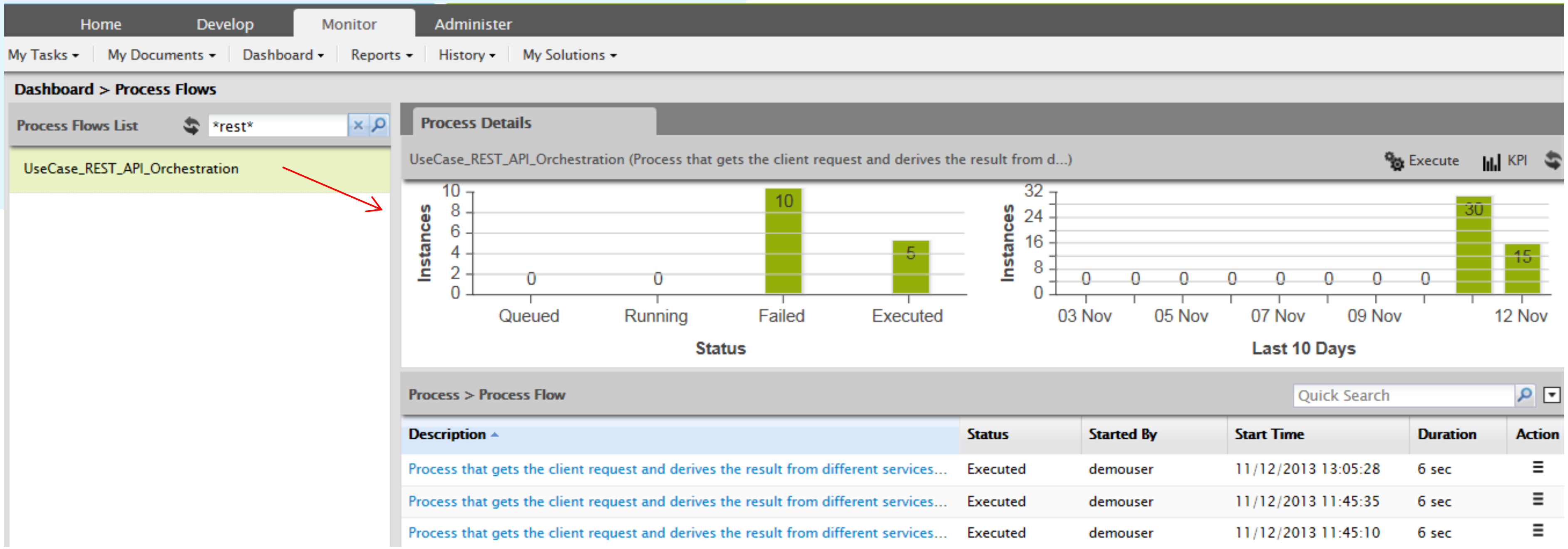
Run-time: Monitor the progress and the final status of the REST API Request

Run time can be monitored by going to Monitor > Dashboard > Process Flow
This dashboard shows all the run-time executions of the orchestrations that are triggered from the REST API requests. You can look at the actual request, response and the status of the orchestration.



Description	Status	Started By	Start Time	Duration	Action
Process that gets the client request and derives the result from different services...	Executed	demouser	11/12/2013 13:05:28	6 sec	≡
Process that gets the client request and derives the result from different services...	Executed	demouser	11/12/2013 11:45:35	6 sec	≡
Process that gets the client request and derives the result from different services...	Executed	demouser	11/12/2013 11:45:10	6 sec	≡

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Let’s build the process flow

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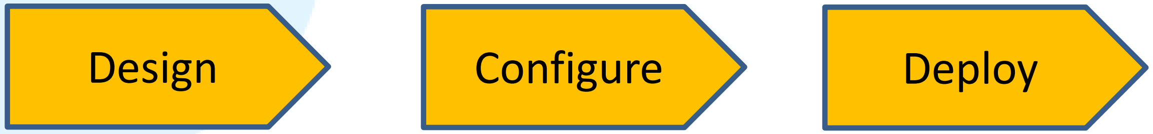
Design methodology



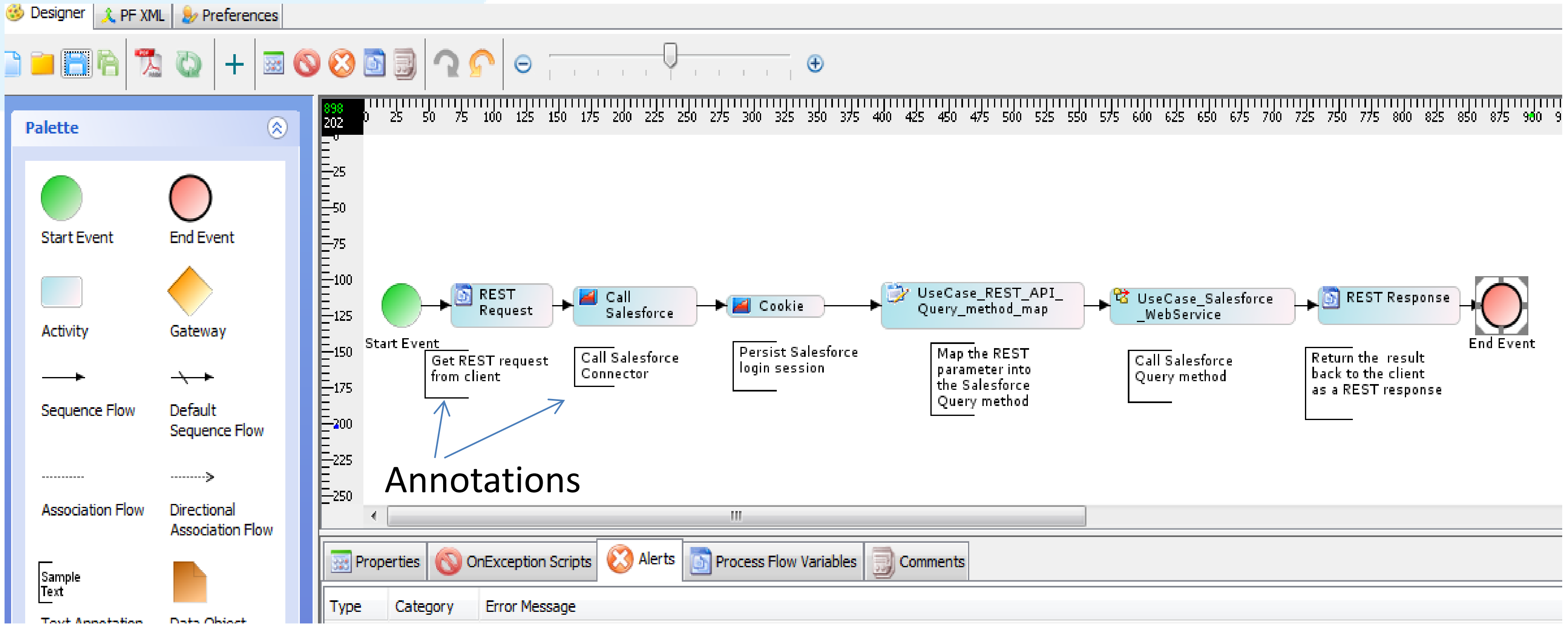
Design a high level process flow

Configure all the activities In the process flow

Publish the process flow as a REST API

Design: First let's create a Top level design of the solution using the Process Designer

Go to Develop > Process > Process Flow
Create new and in the designer design a top-level flow by pulling the icons from the palette area.
Refer to the reference video and the annotations for each activity to see how to design a process flow.
Each activity performs a discreet function such as getting request, mapping, sending response.
The Salesforce connector is already pre-built and we are reusing it in this process flow.



Get REST request from client

Call Salesforce Connector

Persist Salesforce login session

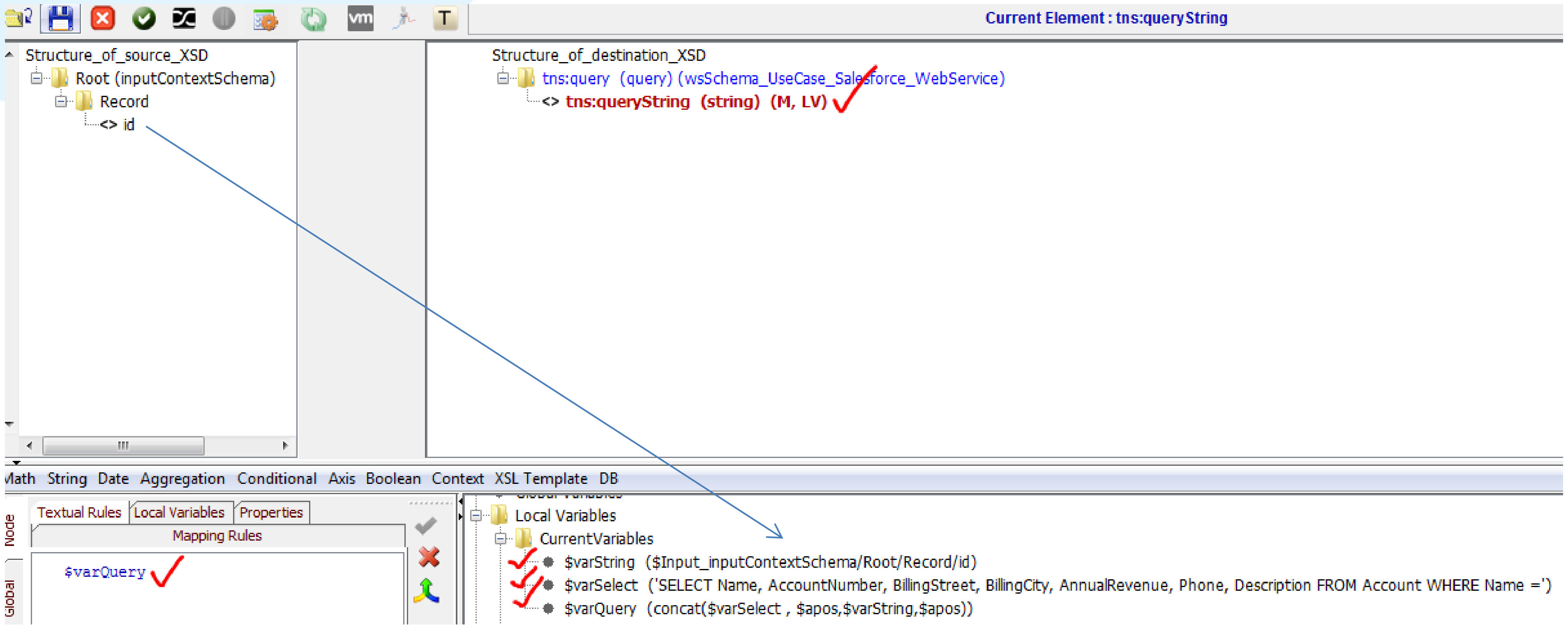
Map the REST parameter into the Salesforce Query method

Call Salesforce Query method

Return the result back to the client as a REST response

Configure: Let’s map the REST API request to Salesforce query method

Go to Develop > Data Transformation> Mapping
In this mapping we are mapping the “id” into the Query field of the Salesforce Query method.
We created local variables to store the value and build the query string that is passed to the target element.
varString is a local variable that gets the value form “id” parameter.
varSelect is a local variable that has a SOQL string as shown below
varQuery concatenates the “id” and the query string together. This variable is mapped to the target field.


Current Element : tns:queryString

Structure_of_source_XSD
Root (inputContextSchema)
Record
<> id

Structure_of_destination_XSD
tns:query (query) (wsSchema_UseCase_Salesforce_WebService)
<> tns:queryString (string) (M, LV)

Math String Date Aggregation Conditional Axis Boolean Context XSL Template DB

Textual Rules | Local Variables | Properties
Mapping Rules

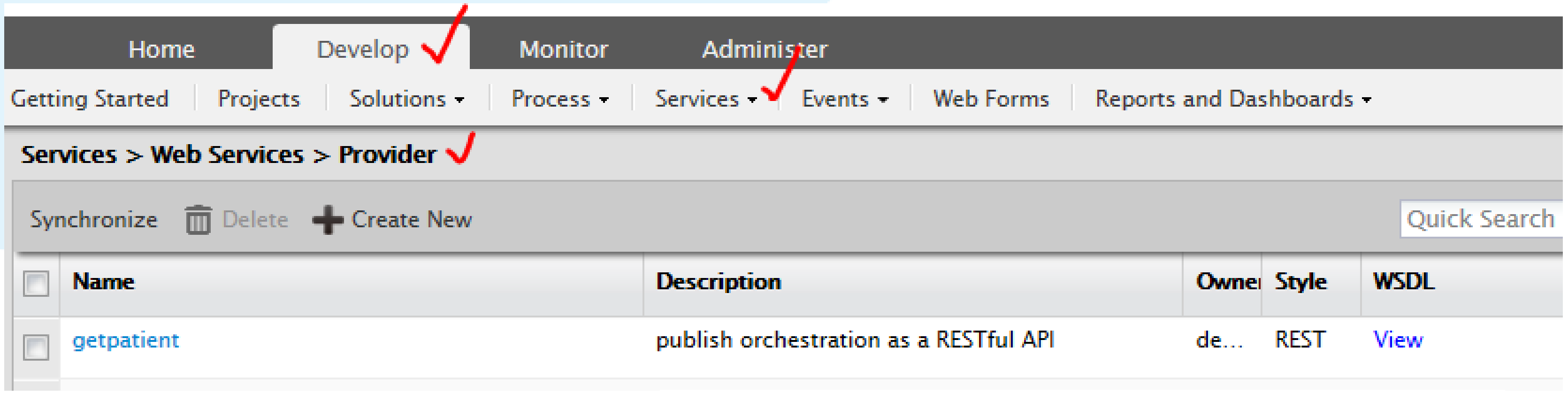
```
$varQuery
```

Local Variables
CurrentVariables
$varString ($Input_inputContextSchema/Root/Record/id)
$varSelect ('SELECT Name, AccountNumber, BillingStreet, BillingCity, AnnualRevenue, Phone, Description FROM Account WHERE Name =')
$varQuery (concat($varSelect , $apos,$varString,$apos))

Deploy: Publish Process Flow as a REST API

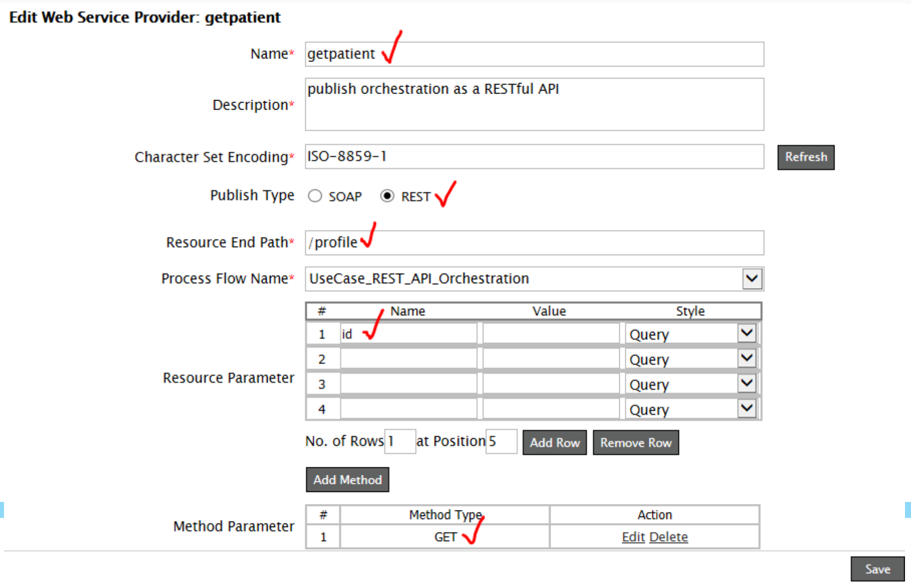
Create Provider activity by going to Develop > Services > Web Services > Provider

Here we are publishing our process flow as RESTful Web Service using Get method.
We also defined the parameter name as “id”.



Services > Web Services > Provider

	Name	Description	Owner	Style	WSDL
☐	getpatient	publish orchestration as a RESTful API	de...	REST	View



Edit Web Service Provider: getpatient

Name*	getpatient
Description*	publish orchestration as a RESTful API
Character Set Encoding*	ISO-8859-1
Publish Type	SOAP [✓ REST]
Resource End Path*	/profile
Process Flow Name*	UseCase_REST_API_Orchestration

Resource Parameter

#	Name	Value	Style
1	id		Query
2			Query
3			Query
4			Query

No. of Rows 1 at Position 5

Method Parameter

#	Method Type	Action
1	GET	Edit Delete

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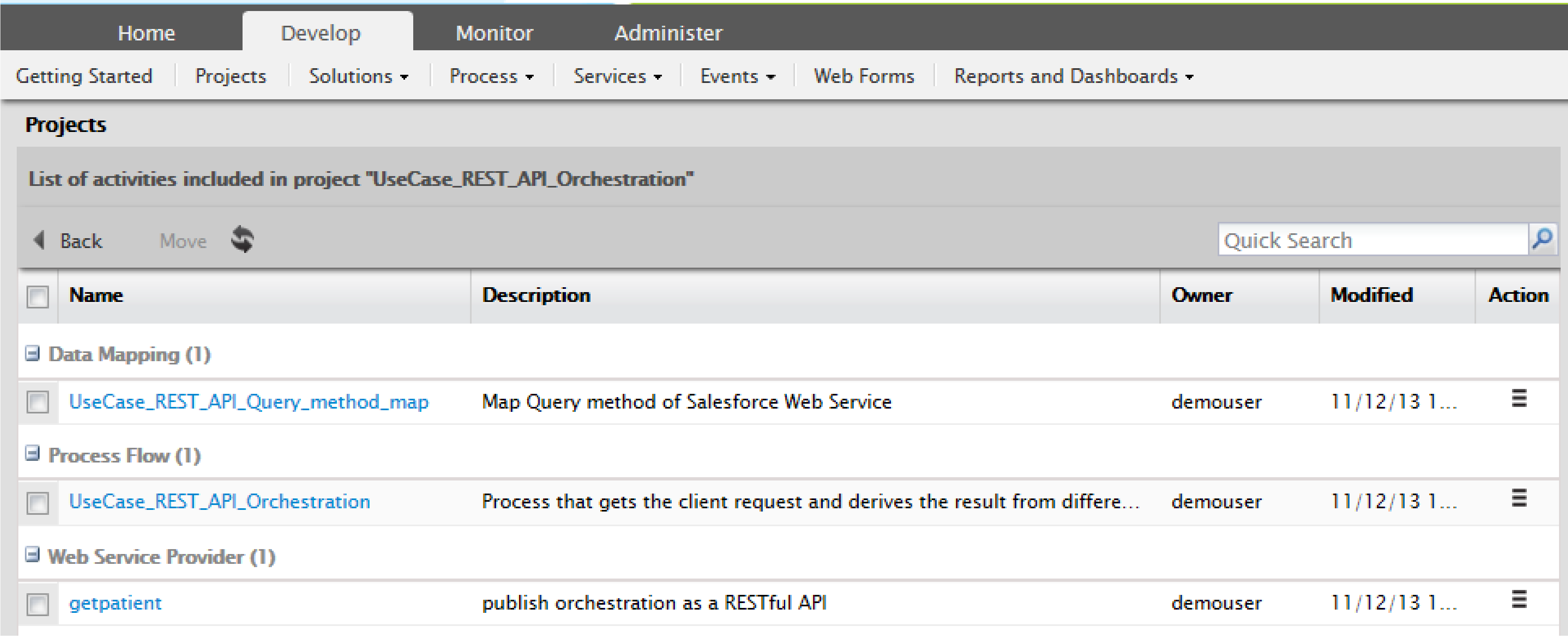
Managing the activities created for this use case

You can manage and view all the activities of this use case by going to Develop > Projects
Click on the project named "UseCase_REST_API_Orchestration" and it will show all the activities configured for this process under its related categories. You can open any category to view its activities.



Projects

List of activities included in project "UseCase_REST_API_Orchestration"

Name	Description	Owner	Modified	Action
Data Mapping (1)				
UseCase_REST_API_Query_method_map	Map Query method of Salesforce Web Service	demouser	11/12/13 1...	≡
Process Flow (1)				
UseCase_REST_API_Orchestration	Process that gets the client request and derives the result from differe...	demouser	11/12/13 1...	≡
Web Service Provider (1)				
getpatient	publish orchestration as a RESTful API	demouser	11/12/13 1...	≡

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Thank You!

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