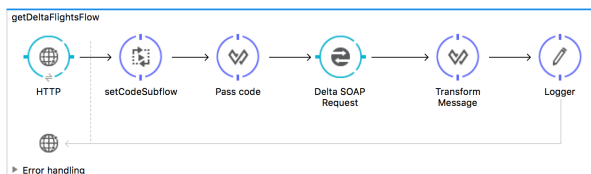
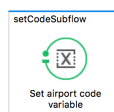
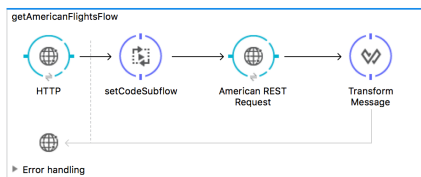
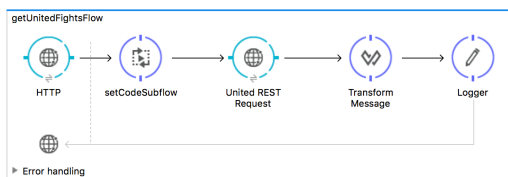




Module 8: Consuming Web Services

Goal



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GET localhost:8081/united?code=CLE

Body Cookies Headers (3) Tests

Pretty Raw Preview JSON

```

1  [
2  {
3    "airline": "United",
4    "flightCode": "ER9fje",
5    "fromAirportCode": "MUA",
6    "toAirportCode": "CLE",
7    "departureDate": "2015/07/11",
8    "emptySeats": 32,
9    "price": 845,
10   "planeType": "Boeing 727"
11  },
12  {
13    "airline": "United",
14    "flightCode": "ER3kfd",
15    "fromAirportCode": "MUA",
16    "toAirportCode": "CLE",
17    "departureDate": "2015/08/11",
18    "emptySeats": 13,
19    "price": 245,
20    "planeType": "Boeing 747"
21  }
22 ]
  
```

2

At the end of this module, you should be able to



- Consume RESTful web services with and without parameters
- Consume RESTful web services that have RAML definitions
- Consume SOAP web services
- Use DataWeave to pass parameters to SOAP web services

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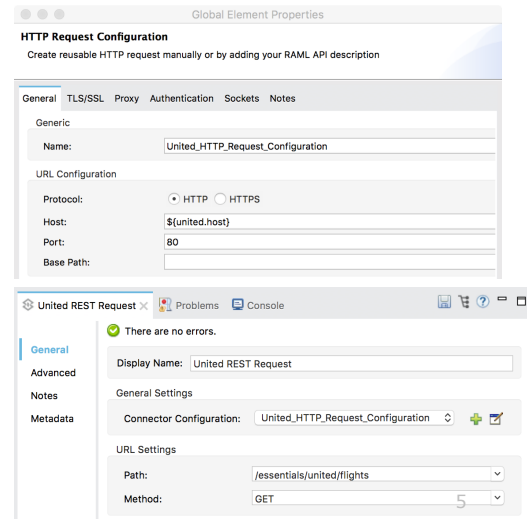
Consuming RESTful web services



Consuming RESTful web services



- First check and see if there is an existing Anypoint Connector to connect to the service provider
- If there is not, use the HTTP Request connector
 - For the connector
 - Specify host, port, and optionally, a base path
 - For the endpoint
 - Specify path and method

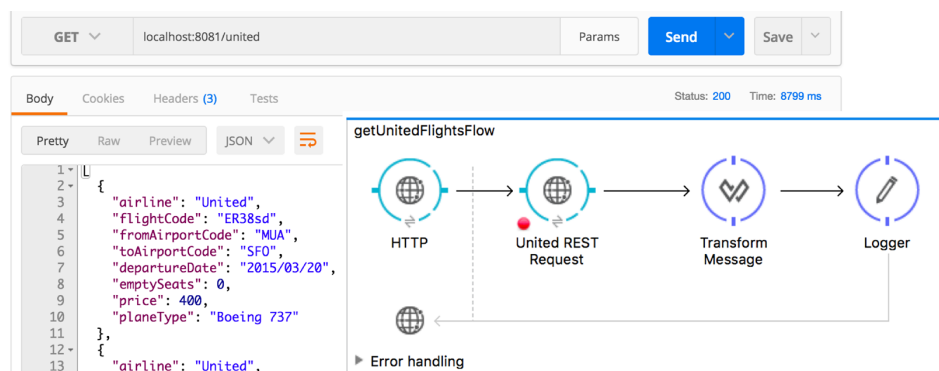


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Walkthrough 8-1: Consume a RESTful web service



- Create a new flow to call a RESTful web service
- Use an HTTP Request endpoint to consume a RESTful web service
- Use DataWeave to transform the JSON response into JSON specified by an API



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Passing arguments to RESTful web services



Passing data to a RESTful web service



- For an HTTP Request endpoint, you can add parameters
 - URI parameters
 - Query parameters
 - Headers

A screenshot of the MuleSoft Parameters configuration interface. It shows a table with columns for Name and Value. The first row has 'customer_id' as the Name and '2' as the Value. There is an 'Add Parameter' button at the bottom.

- Send form parameters with a request by setting them in the payload
- Include attachments by adding an Attachment transformer to your flow



Set Payload

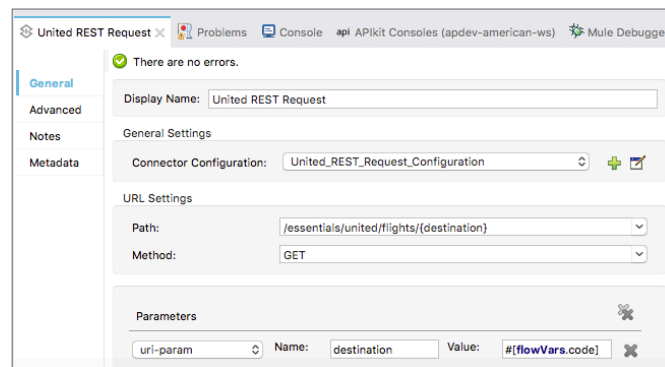


Attachment

Walkthrough 8-2: Pass arguments to a RESTful web service



- Modify the HTTP Request endpoint to use a URI parameter
- Set the destination to a static value
- Create a flow variable to store the value of a query parameter
- Set the URI parameter to the dynamic value of this flow variable



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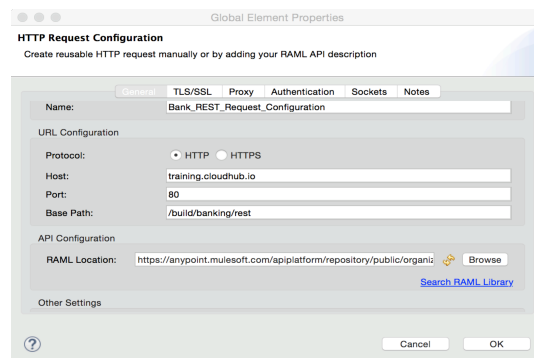
Consuming RESTful web services that have RAML definitions



Consuming RESTful web services that have RAML definitions



- A RAML location (local file or external URI) can be specified for an HTTP Request connector
- After you specify a RAML location
 - All fields will be automatically populated based on what's specified in the RAML



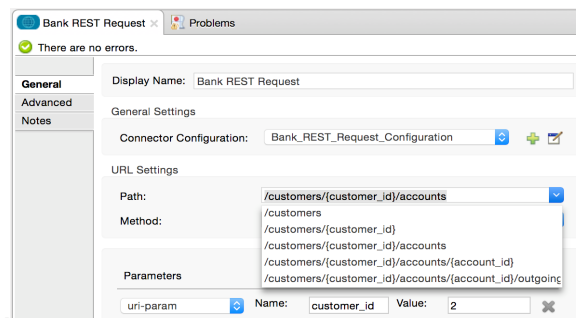
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RAML metadata



- Will be obtained every time you open the project in Anypoint Studio
- Is kept in cache until you close the project
- Can be refreshed /reloaded if the RAML changes
- Is used by Anypoint Studio to offer intelligent suggestions



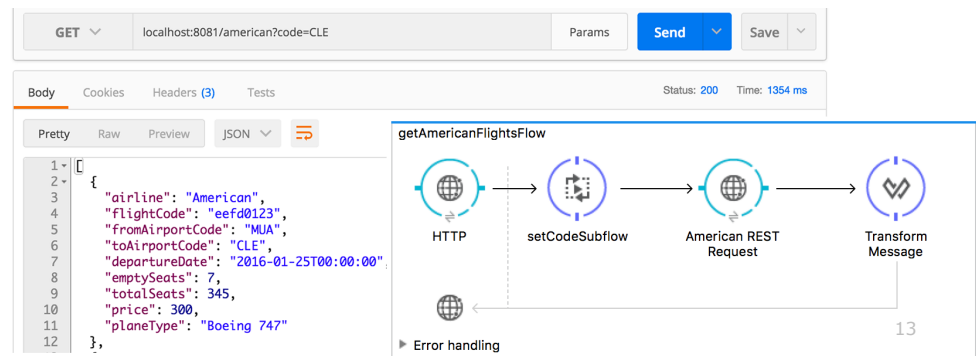
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Walkthrough 8-3: Consume a RESTful web service that has a RAML definition



- Create a new flow to call a RESTful web service that has a RAML definition
- Select the web service resource from the list provided by Anypoint Studio from the RAML file
- Use DataWeave to transform the JSON response into JSON specified by an API



Consuming SOAP web services



Mule's SOAP support is based on Apache CXF



- CXF is a web services framework in Java for SOAP messaging
- Handles all serialization and deserialization
- Handles all SOAP envelope and namespace processing
- Developer sees only POJOs, etc. - not SOAP XML

Consuming SOAP web services



- First check and see if there is an existing Anypoint Connector to connect to the service provider
- If there is not, use the Web Service Consumer connector
 - Provide the location of the WSDL
 - The rest will be configured for you: host, port, address, available operations
- If you need more features, use the CXF component
 - Also used to expose an endpoint as a SOAP service

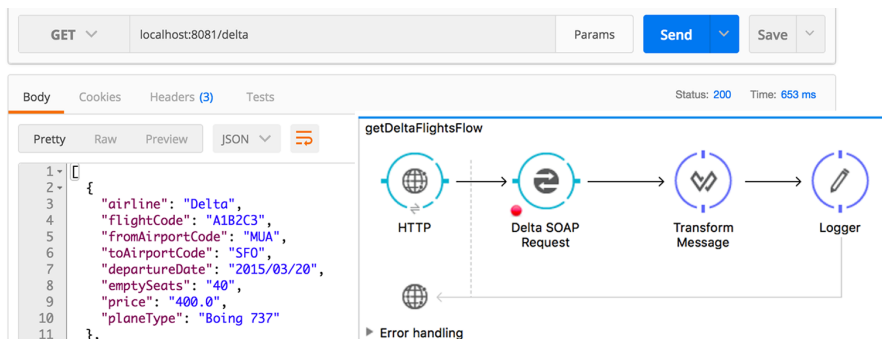
Web Service
Consumer

CXF

Walkthrough 8-4: Consume a SOAP web service



- Create a new flow to call a SOAP web service
- Use a Web Service Consumer endpoint to consume a SOAP web service for Delta flight data.
- Use DataWeave to transform the XML response into JSON specified by the MUA Flights API



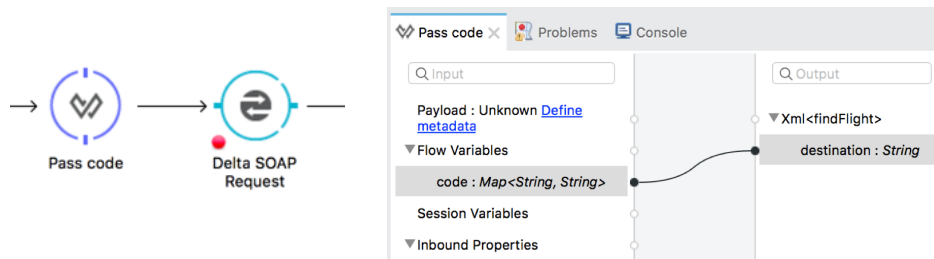
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Passing arguments to SOAP web services with DataWeave

Passing data to a SOAP web service



- Use DataWeave to add and map an input argument



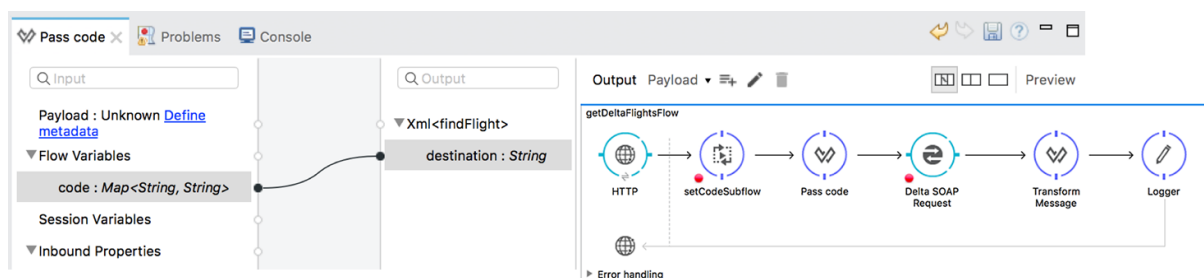
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Walkthrough 8-5: Pass arguments to a SOAP web service



- Change the web service operation invoked to one that requires a destination as an input argument
- Set a flow variable to the desired destination
- Use DataWeave to pass the flow variable to the web service operation



Summary



Summary



- Use the **HTTP Request** connector to consume REST web services
 - With or without URI parameters and query parameters
 - With or without a RAML definition
- Use the **Web Service Consumer** connector to consume SOAP web services
- Use the DataWeave Transform Message component to pass arguments to SOAP web services