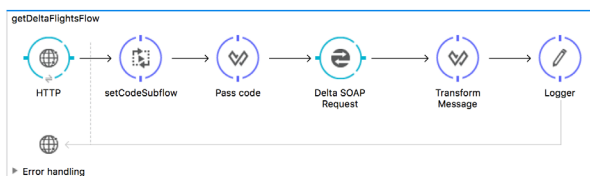
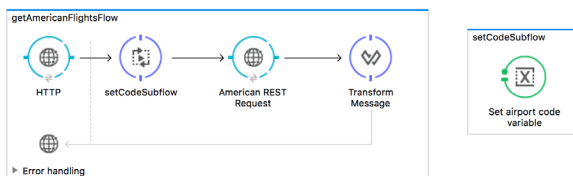
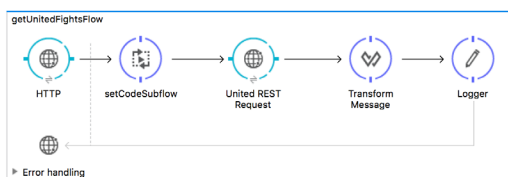




# Module 7: Consuming Web Services

## Goal



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```

GET localhost:8081/united?code=CLE

Body
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

## Objectives

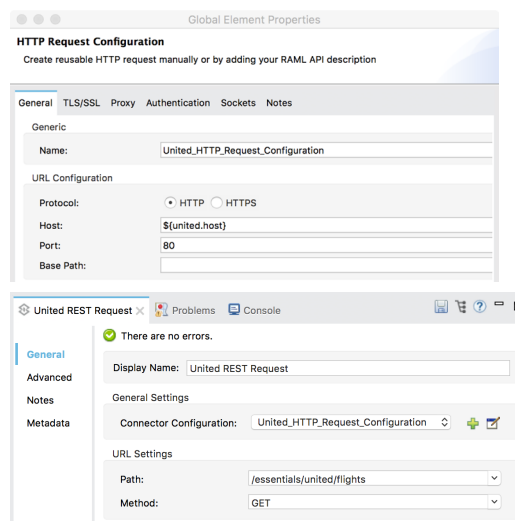


- Consume RESTful web services with and without parameters
- Consume RESTful web services that have RAML definitions
- Consume SOAP web services
- Use DataWeave to pass parameters to SOAP web services

## 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

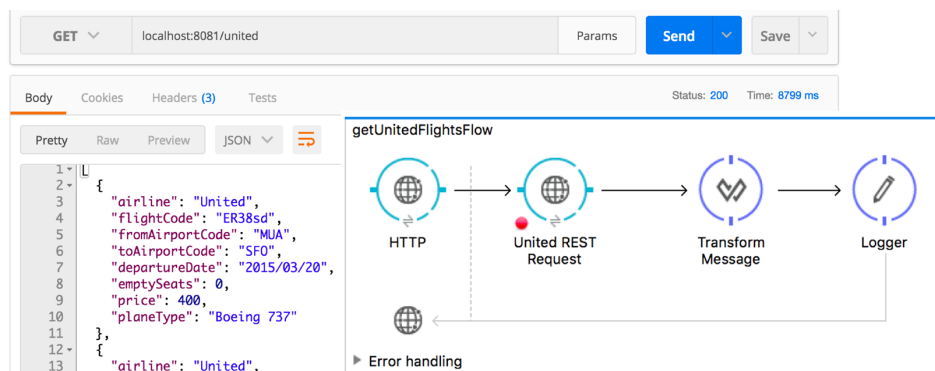


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## Walkthrough 7-1: Consume a RESTful web service



- 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



13

# 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

Parameters		
uri-param	Name:	customer_id
	Value:	2

Add Parameter

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



Set Payload

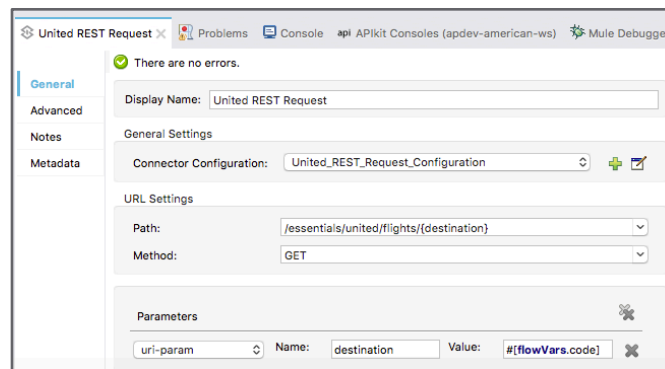


Attachment

## Walkthrough 7-2: 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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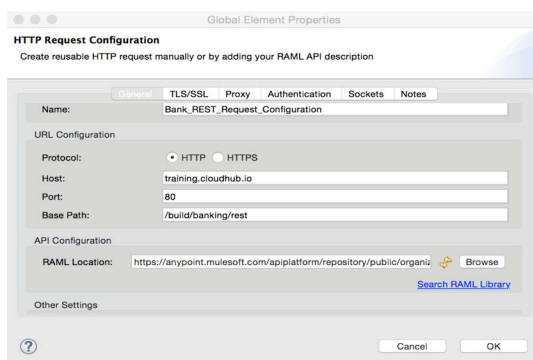
15

# 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



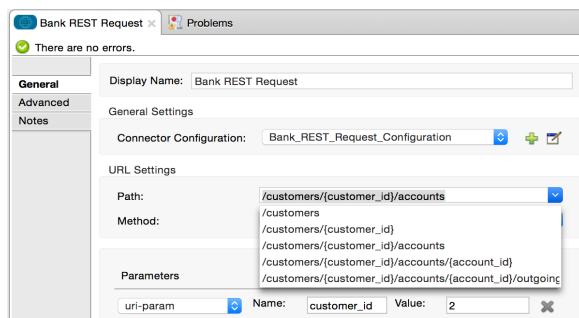
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21

## 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



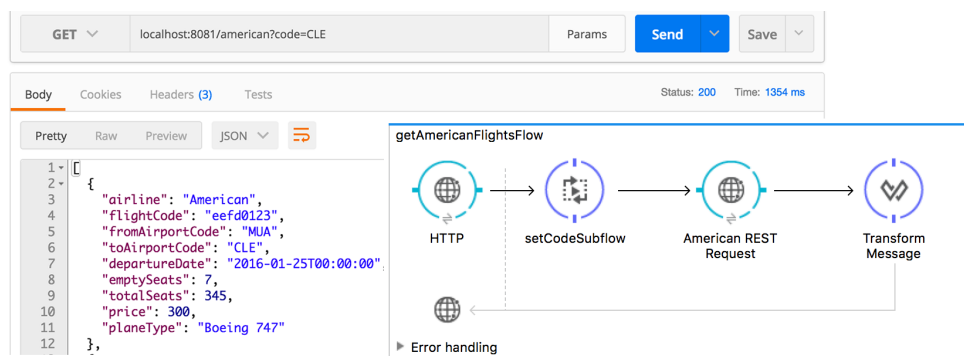
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22

## Walkthrough 7-3: 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

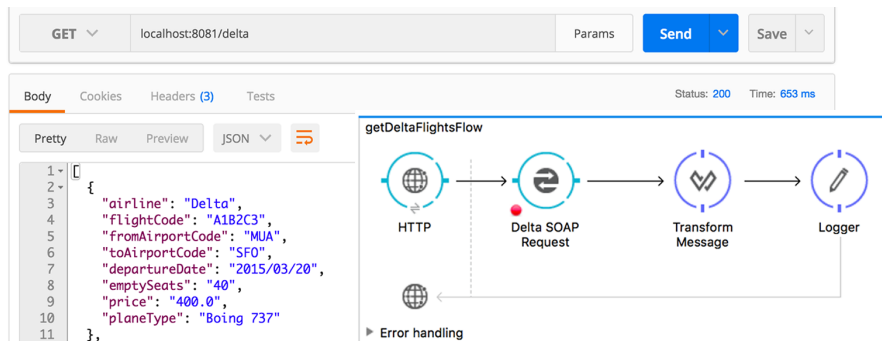




## Walkthrough 7-4: Consume a SOAP Web Service



- 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



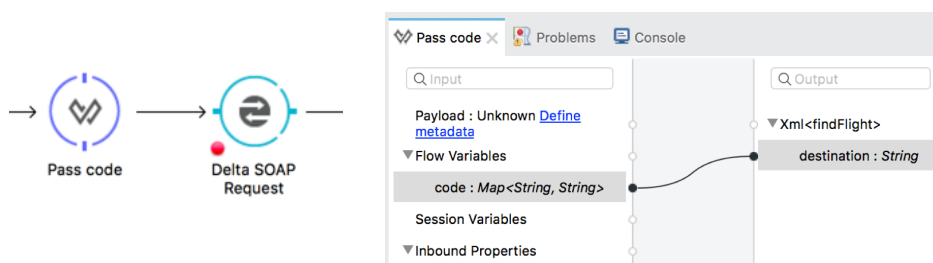
27

# Passing arguments to SOAP web services with DataWeave

## Passing data to a SOAP web service



- Use DataWeave to add and map an input argument



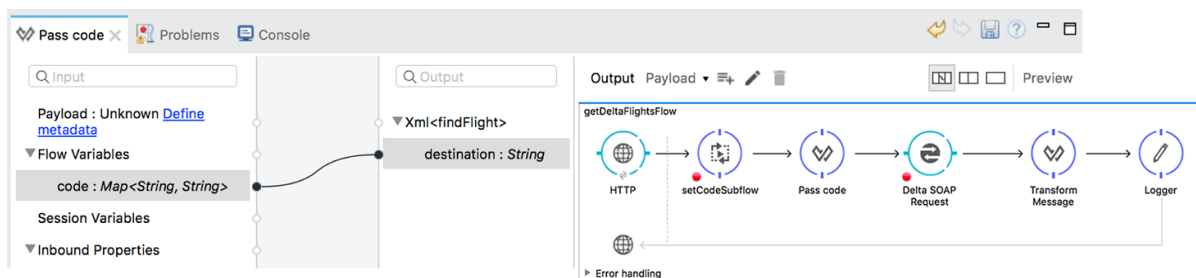
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28

## Walkthrough 7-5: 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