MuleSoft

Module 9: Controlling event flow

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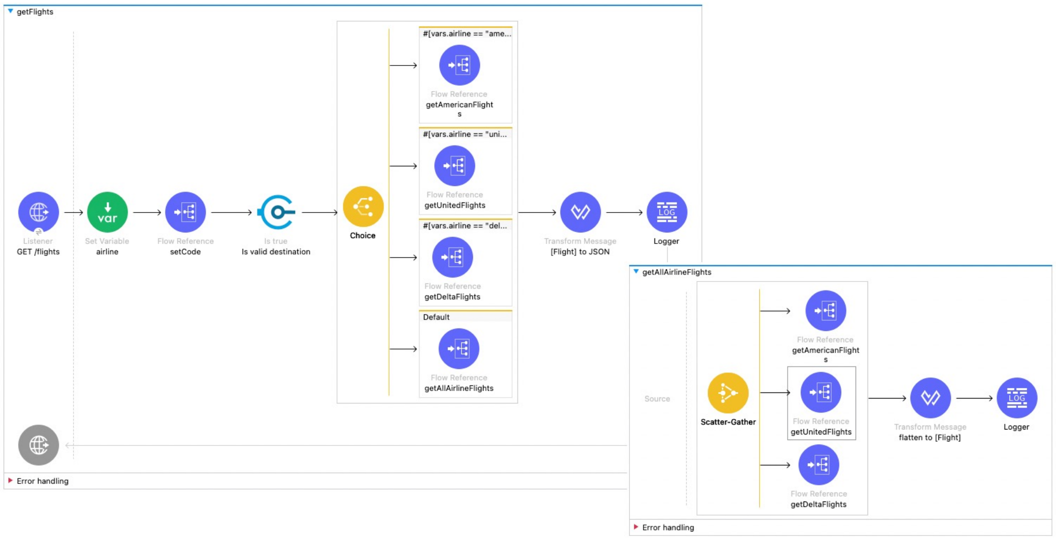
Goal

MuleSoft



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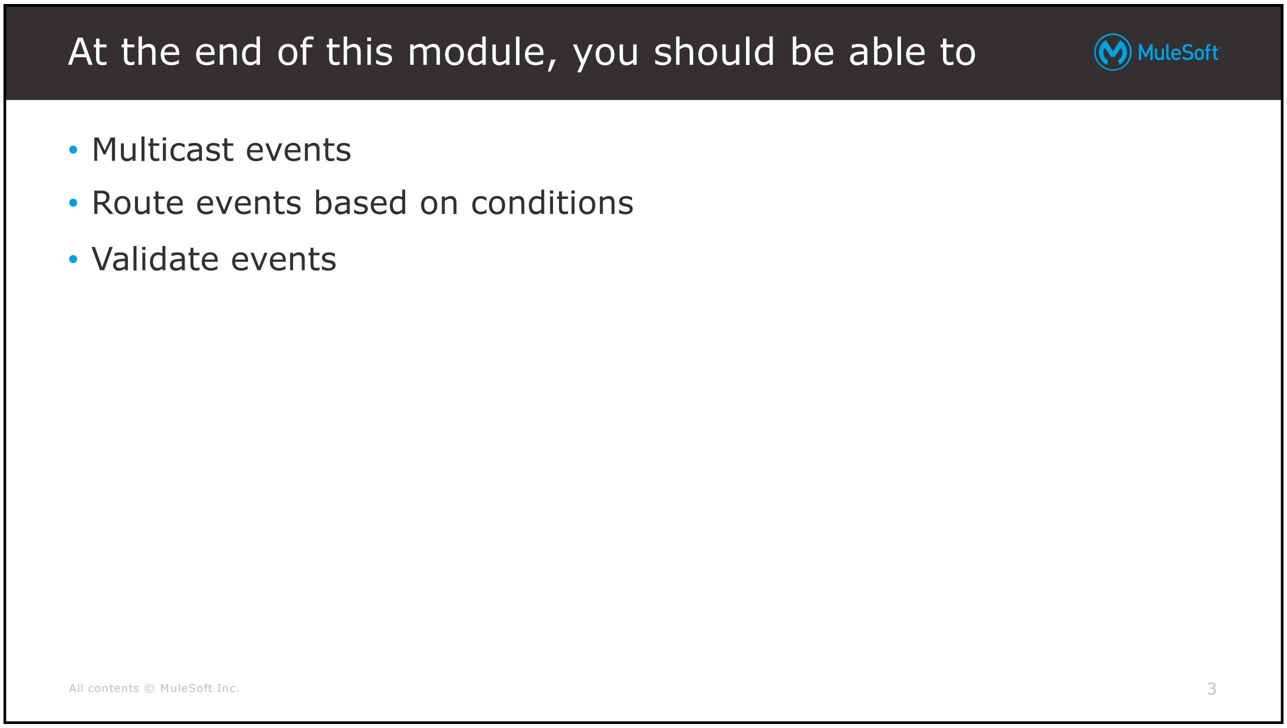

At the end of this module, you should be able to

- Multicast events
- Route events based on conditions
- Validate events

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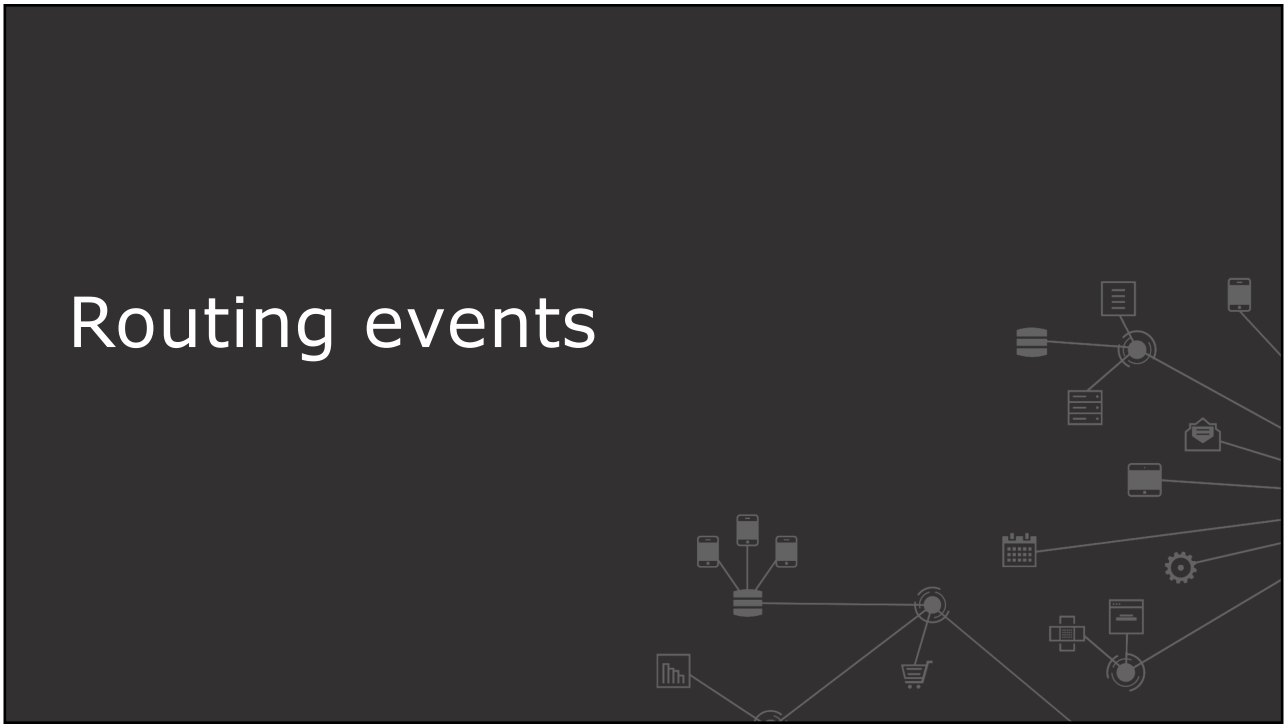

Routing events

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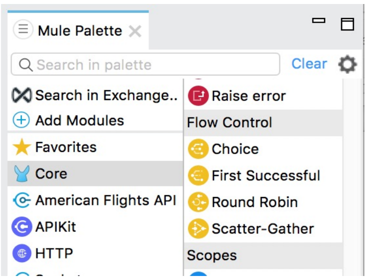
Routers

MuleSoft

- Routers send events to one or more groups of event processors (routes)

- **Choice**
  - One route executed based on conditional logic
- First Successful
  - Routes executed sequentially until one is successfully executed
- Round Robin
  - One route executed, which one is selected by iterating through a list maintained across executions
- **Scatter-Gather**
  - All routes executed concurrently



Multicasting events

The Scatter-Gather router

MuleSoft

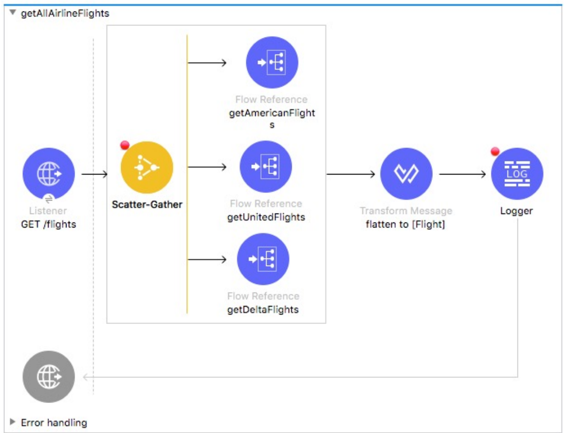
- Scatter-Gather sends the event to each route concurrently and returns a collection of all results
- Collection is an object of objects
  - Each object contains attributes and payload from each Mule event returned from a flow

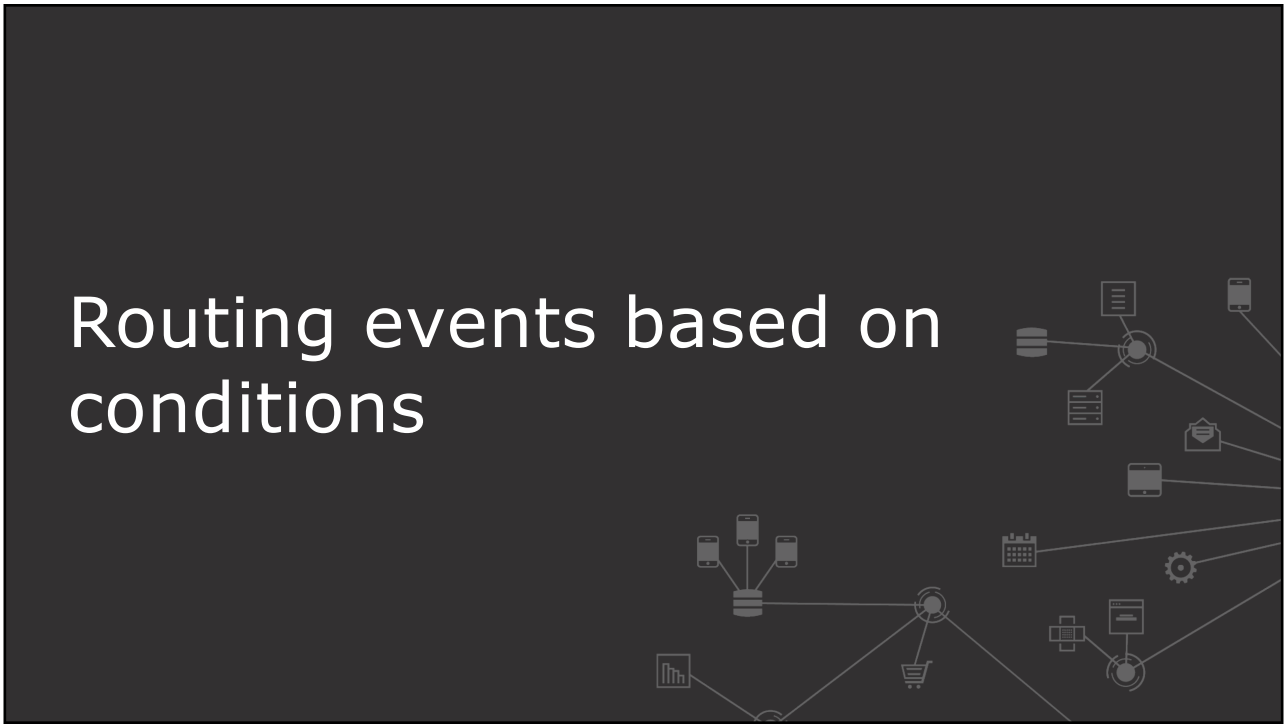
```
{
  "0": {
    "exceptionPayload": null,
    "inboundAttachmentNames":  [ ],
    "outboundPropertyNames":   [ ],
    "inboundPropertyNames":    [ ],
    "attributes": { },
    "outboundAttachmentNames": [ ],
    "payload": [
      {
        "airline": "Delta",
        "flightCode": "A1B2C3",
        "fromAirportCode": "MUA",
        "toAirportCode": "SFO",
        "departureDate": "2015/03/20",
        "emptySeats": "40",
        "price": "400.0",
        "planeType": "Boing 737"
      }
    ],
  "1": {
    "exceptionPayload": null,
    "inboundAttachmentNames":  [ ],
    "outboundPropertyNames":   [ ],
    "inboundPropertyNames":    [ ],
    "attributes": { },
    "outboundAttachmentNames": [ ],
    "payload": "A Payload"
}
```

Walkthrough 9-1: Multicast an event

MuleSoft

- Use a Scatter-Gather router to concurrently call all three flight services
- Use DataWeave to flatten multiple collections into one collection





Routing events based on conditions

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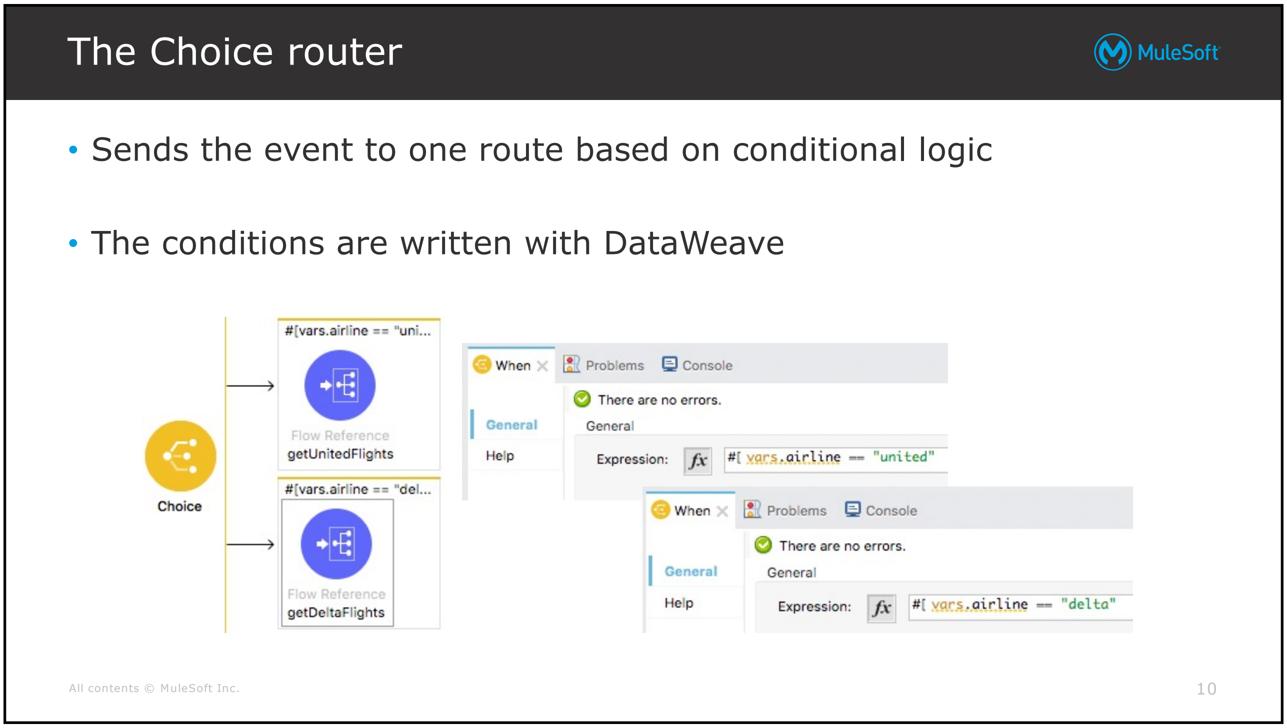

The Choice router

MuleSoft

- Sends the event to one route based on conditional logic
- The conditions are written with DataWeave

There are no errors.

General

Expression: #[vars.airline == "united"

There are no errors.

General

Expression: #[vars.airline == "delta"

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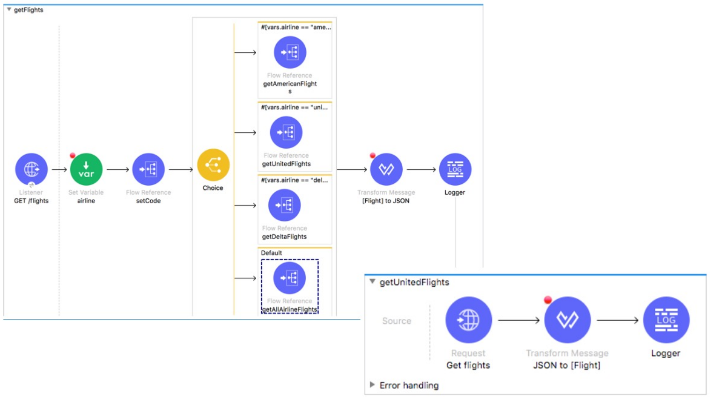
Walkthrough 9-2: Route events based on conditions

MuleSoft

- Use a Choice router
- Use DataWeave expressions to set the router paths
- Route all flight requests through the router

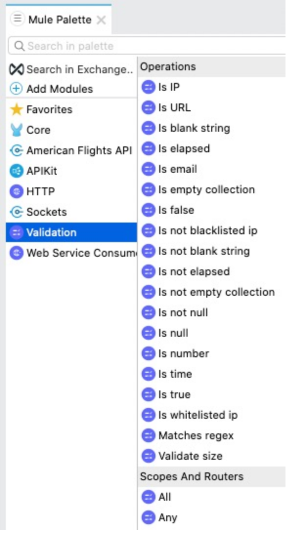


Validating events

Validators

MuleSoft

- Provide a way to test some conditions are met and throw an error if the validation fails
- To use
  - Add the Validation module to a project
  - Select a validation operation



Mule Palette

Search in palette

Search in Exchange..
Add Modules
Favorites
Core
American Flights API
APIKit
HTTP
Sockets
Validation
Web Service Consum

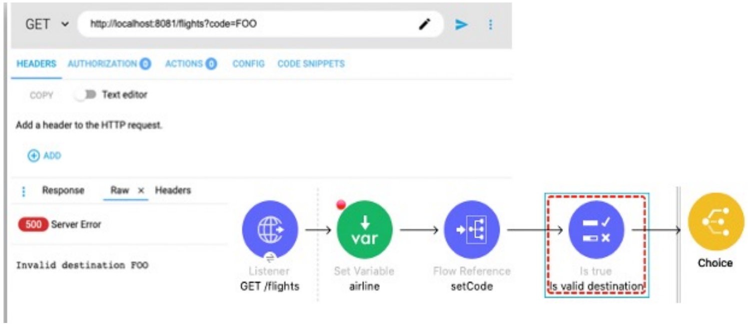
Operations
- Is IP
- Is URL
- Is blank string
- Is elapsed
- Is email
- Is empty collection
- Is false
- Is not blacklisted ip
- Is not blank string
- Is not elapsed
- Is not empty collection
- Is not null
- Is null
- Is number
- Is time
- Is true
- Is whitelisted ip
- Matches regex
- Validate size

Scopes And Routers
- All
- Any

Walkthrough 9-3: Validate events

MuleSoft

- Add the Validation module to a project
- Use an Is true validator to check if a query parameter called code with a value of SFO, LAX, CLE, PDX, or PDF is sent with a request
- Return a custom error message if the condition is not met



GET http://localhost:8081/flights?code=FOO

HEADERS AUTHORIZATION 0 ACTIONS 0 CONFIG CODE SNIPPETS

COPY Text editor

Add a header to the HTTP request.

ADD

Response Raw × Headers

500 Server Error

```
Invalid destination FOO
```

Summary

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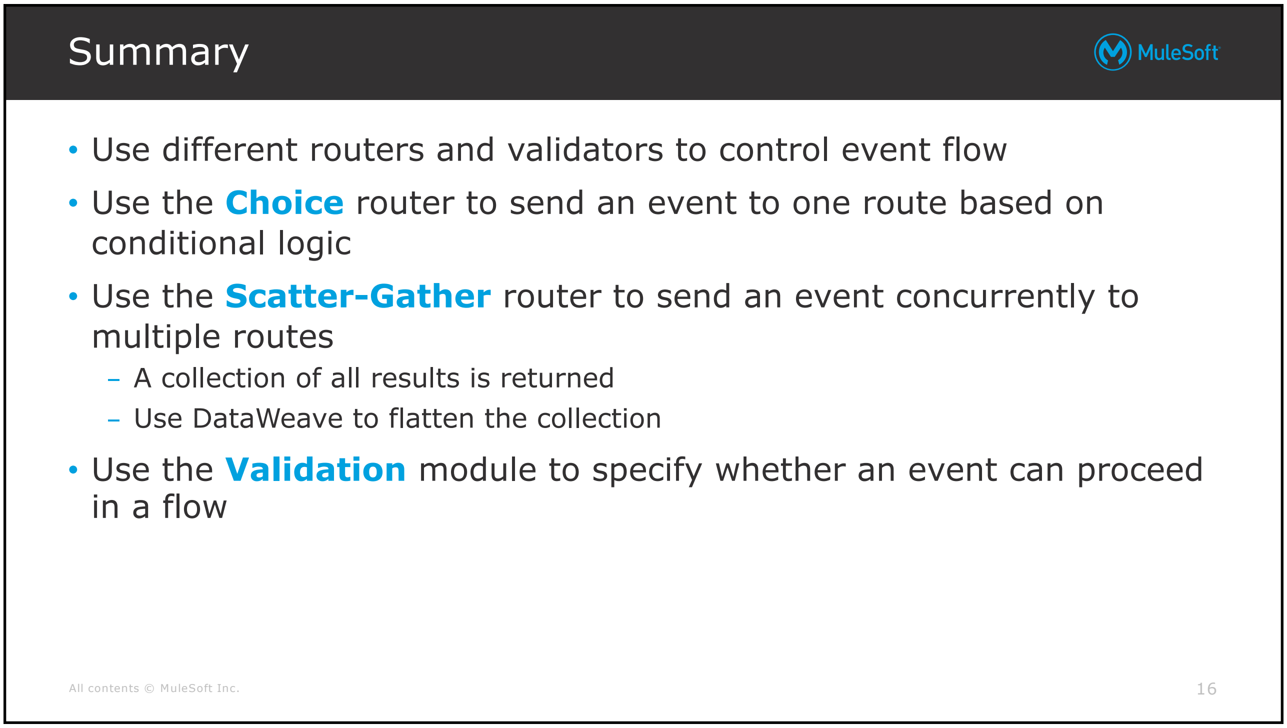

Summary

- Use different routers and validators to control event flow
- Use the **Choice** router to send an event to one route based on conditional logic
- Use the **Scatter-Gather** router to send an event concurrently to multiple routes
  - A collection of all results is returned
  - Use DataWeave to flatten the collection
- Use the **Validation** module to specify whether an event can proceed in a flow

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