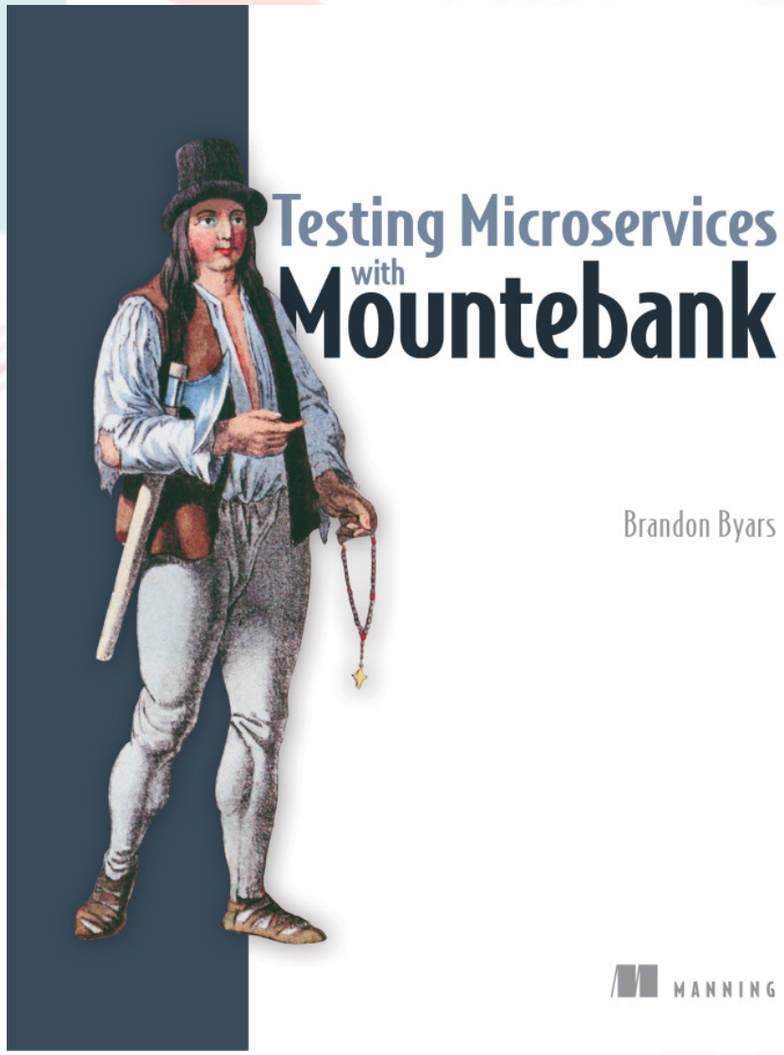
จำลองระบบเพื่อใช้ในการทดสอบ ด้วย

Mountebank 101



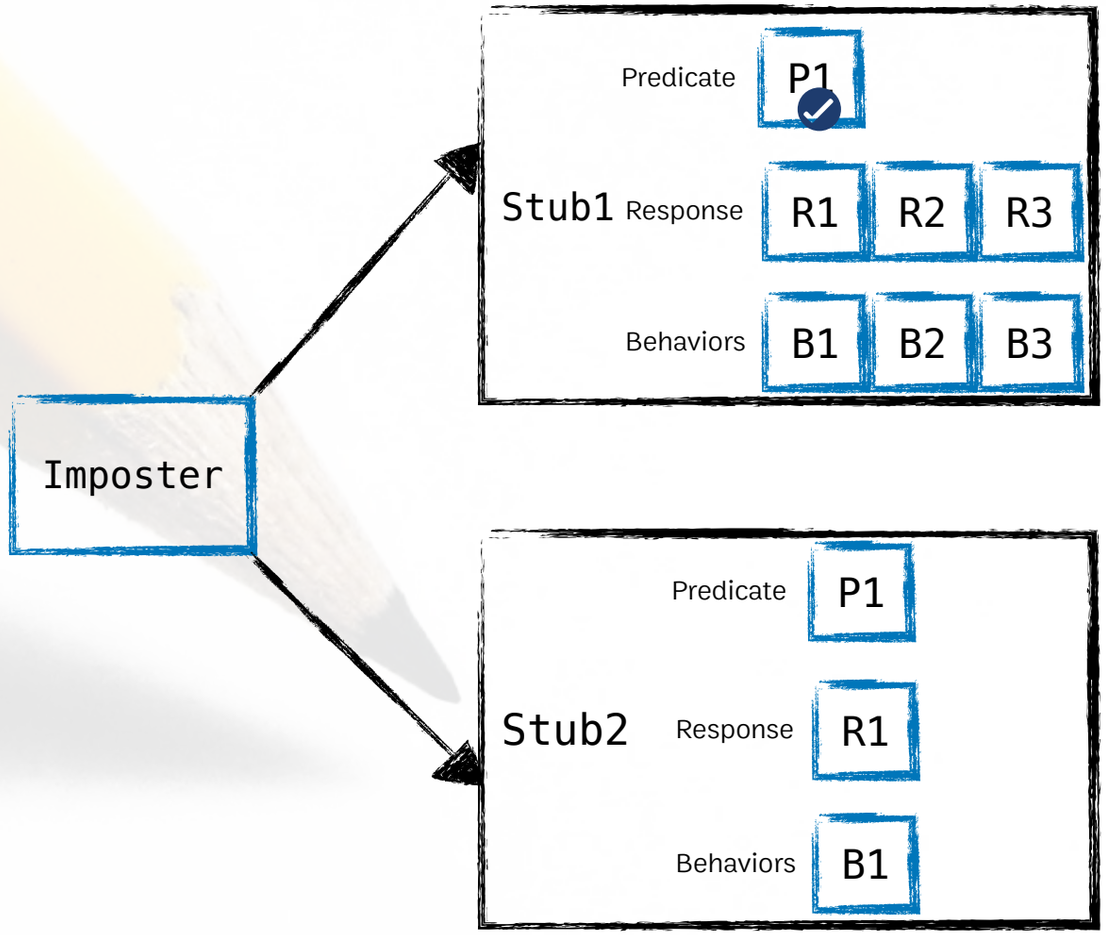
- Hello, World! Mountebank
- Predicates
- Behavior and Programming mountebank
- Adding Behaviors
- Record/Replay

Day3: Adding Behaviors

Understand behaviors

- **Predicates** help route requests on the way in.
- **Responses** generate the responses on the way out.
- ***Behaviors*** post-process the responses before shipping them over the wire

```
{  "protocol": "http",
  "port": 3000,
  "stubs": [
   {
     "predicates": [],
     "responses": [
       {
         "is": {},
         "_behaviors": {
           "decorate": {},
           "wait": {},
           "copy": []
         }
       }
     ]
   }
  ]
}
```



from: Testing Microservice with Mountebank page 131

Decorating a response: allows you to post-process the response.

Using the decorate function

An ***inject*** response

```
{
  "responses": [
    {
      "inject": "function (request, state, logger) {}"
    }
  ]
}
```

A ***decorate*** behavior

```
{
  "responses": [
    {
      "is": {
        "body": {}
      },
      "_behaviors": {
        "decorate": "function (request, response, logger) {}"
      }
    }
  ]
}
```

Plugging the decoration into the behaviours

Imposter: decorate.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
      "responses": [
        {
          "is": {
            "statusCode": 201,
            "headers": { "Content-Type": "application/json" },
            "body": {}
          },
          "_behaviors": {
            "decorate": "function (request, response, logger) { const item =
JSON.parse(request.body); response.body.message = item.name + ' is
created';}"
          }
        }
      ]
    }
  ]
```

Postman: request with

HTTP Method

POST

URL

http://localhost:3000

start Mountebank: unix/windows

```
mb start --allowInjection --configfile decorate.json
```

Quiz Behaviors

Postman: request with

HTTP Method

POST

URL

http://localhost:3000/items

HEADER

```
"Content-Type": "application/json"
```

Body

```
{
  "name": "riderX",
   "price": 100
}
```

expected value

```
HTTP/1.1 201 OK
Date: Sun, 05 Apr 2020 10:10:10 GMT
Content-Type: application/json

{
  "message": "riderX is created",
  "timestamp": "Thu Apr 09 2020 00:21:32 GMT+0700 (Indochina Time)"
}
```

Adding latency to a Response

Using a wait behavior to add latency

Imposter: sleep.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
      "responses": [
        {
          "is": {
            "statusCode": 201,
            "headers": { "Content-Type": "application/json" },
            "body": { "name": "sleep" }
          },
          "_behaviors": {
            "wait": 3000
          }
        }
      ]
    }
  ]
}
```

Postman: request with

HTTP Method

GET

URL

http://localhost:3000

start Mountebank: unix/windows

```
mb start --allowInjection --configfile sleep.json
```

Repeating a Response Multiple Times

Using a repeat behavior to return an error after a small number of successes

Imposter: repeating_a_response.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [{
     "predicates": [
      { "matches": { "path": "/items/1" } }
     ],
     "responses": [
      {
        "is": {
          "body": { "name": "43 Piece Dinner Set", "price": 12.95 }
        },
        "_behaviors": { "repeat": 3 }
      },
      {
        "is": {
          "body": { "name": "RiderX", "price": 2.95}
        }
      },
      {
        "is": {
          "body": { "name": "Alpha Bot", "price": 33.95 }
        },
        "_behaviors": { "repeat": 5 }
      }
    ]
  }]
}
```

Postman: request with

HTTP Method

GET

URL

http://localhost:3000

start Mountebank: unix/windows

```
mb start --allowInjection --configfile repeating_a_response.json
```

Replacing Content in The Response

Replacing Content in The Response

You can always add dynamic data to a response through an inject response, or through the decorate and shellTransform behaviors. But two additional behaviors support inserting certain types of dynamic data into the response **without the overhead of programmatic control**.

from: Testing Microservice with Mountebank page 141

Using a copy behavior to insert the ID from the URL into the response body

Imposter: replacing_content_in_the_response.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
      "responses": [
        {
          "is": {
            "body": {
              "id": "$ID",
              "name": "43 Piece Dinner Set",
              "price": 12.95
            }
          },
          "_behaviors": {
            "copy": [{
                "from": "path",
                "into": "$ID",
                "using": {
                  "method": "regex",
                  "selector": "\\d+$"
                }
            }]
          }
        }
      ]
    }
  ]
}
```

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

start Mountebank: unix/windows

```
mb start --allowInjection --configfile replacing_content_in_the_response.json
```

- **\d** A digit, 0–9 (you have to double-escape the backslash in JSON)
- **\w** A word character
- **+** One or more times
- **$** The end of the string

Copying Request Data to the Response

- The **copy** behavior accepts an array, which means you can make multiple replacements in the response.
- Each replacement should use a different token, and each one can select from a different part of the request.
- You never specify where the token is in the response. That's by design. You could have put the token in the headers or even the statusCode, and mountebank would replace it.

from: Testing Microservice with Mountebank page 143

Using a Group Match

Imposter: using_a_grouped_match.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
      "responses": [
        {
          "is": {
            "body": {
              "id": "$ID[1]",
              "name": "43 Piece Dinner Set",
              "price": 12.95
            }
          },
          "_behaviors": {
            "copy": [{
                "from": "path",
                "into": "$ID",
                "using": {
                  "method": "regex",
                  "selector": "items/(\\w+)"
                }
            }]
          }
        }
      ]
    }
  ]
}
```

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

start Mountebank: unix/windows

```
mb start --allowInjection --configfile using_a_grouped_match.json
```

regex: items/(\\w+)

string: items/123

result: ['items/123', '123']

Quiz Behaviors

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items

HEADER

```
"Content-Type": "application/json"
```

Body

```
{
  "name": "RiderX",
   "price": 100
}
```

expected value

```
HTTP/1.1 201 Created
Date: Sun, 05 Apr 2020 10:10:10 GMT
Content-Type: application/json

{
  "message": "RiderX is created",
  "timestamp": "Thu Apr 09 2020 00:21:32 GMT+0700 (Indochina Time)"
}
```

Looking Up Data from an External Data Source

Imposter: duplicate_stubs.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
      "predicates": [{
         "equals": { "path": "/items/1" }
      }],
      "responses": [{
         "is": {
           "statusCode": 200,
           "headers": { "Content-Type": "application/json" },
           "body": { "id": "1", "name": "43 Piece Dinner Set", "price": 12.95
           }
         }
      }]
    },
    {
      "predicates": [{
         "equals": { "path": "/items/2" }
      }],
      "responses": [{
         "is": {
           "statusCode": 200,
           "headers": { "Content-Type": "application/json" },
           "body": { "id": "2", "name": "RiderX", "price": 2.95
           }
         }
      }]
    },
    {
      "predicates": [{
         "equals": { "path": "/items/3" }
      }],
      "responses": [{
         "is": {
           "statusCode": 200,
           "headers": { "Content-Type": "application/json" },
           "body": { "id": "3", "name": "Alpha Bot", "price": 33.95
           }
         }
      }]
    }
  ]
}
```

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

start Mountebank: unix/windows

```
mb start --allowInjection --configfile duplicate_stubs.json
```

Looking Up Data from an External Data Source

Imposter: lookup.json

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [{
     "responses": [{
        "is": {
          "statusCode": 200,
          "headers": { "Content-Type": "application/json" },
          "body": {
             "id": "${row}['id']",
             "name": "${row}['name']",
             "price": "${row}[price]"
          }
        },
        "_behaviors": {
          "lookup": [
            {
              "key": {
                "from": "path",
                "using": { "method": "regex", "selector": "items/(\\w+)" },
                "index": 1
              },
              "fromDataSource": {
                "csv": { "path": "toys.csv", "keyColumn": "id" }
              },
              "into": "${row}"
            }
          ]
        }
     }]
  }]
}
```

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

start Mountebank: unix/windows

```
mb start --allowInjection --configfile lookup.json
```

Data toys.csv

```
"id","name","price"
"1","43 Piece Dinner Set","12.95"
"2","RiderX","2.95"
"3","Alpha Bot","33.95"
```

Quiz Looking Up Data

request value

POST /items HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "reqId": 12345, "name": "43 Piece Dinner Set is created", "price": 12.95 }

expected value

HTTP/1.1 **201** Created
Date: Sun, 05 Apr 2020 10:10:10 GMT
Content-Type: application/json

{ "message": "43 Piece Dinner Set is created", "reqId": 12345 }

request value

POST /items HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "reqId": 78901, "name": "RiderX", "price": 2.95 }

expected value

HTTP/1.1 **400**
Date: Sun, 05 Apr 2020 10:10:10 GMT
Content-Type: application/json

{ "message": "RiderX is already exists", "reqId": 78901 }

request value

POST /items HTTP/1.1
HOST localhost:3000
Content-Type: application/json

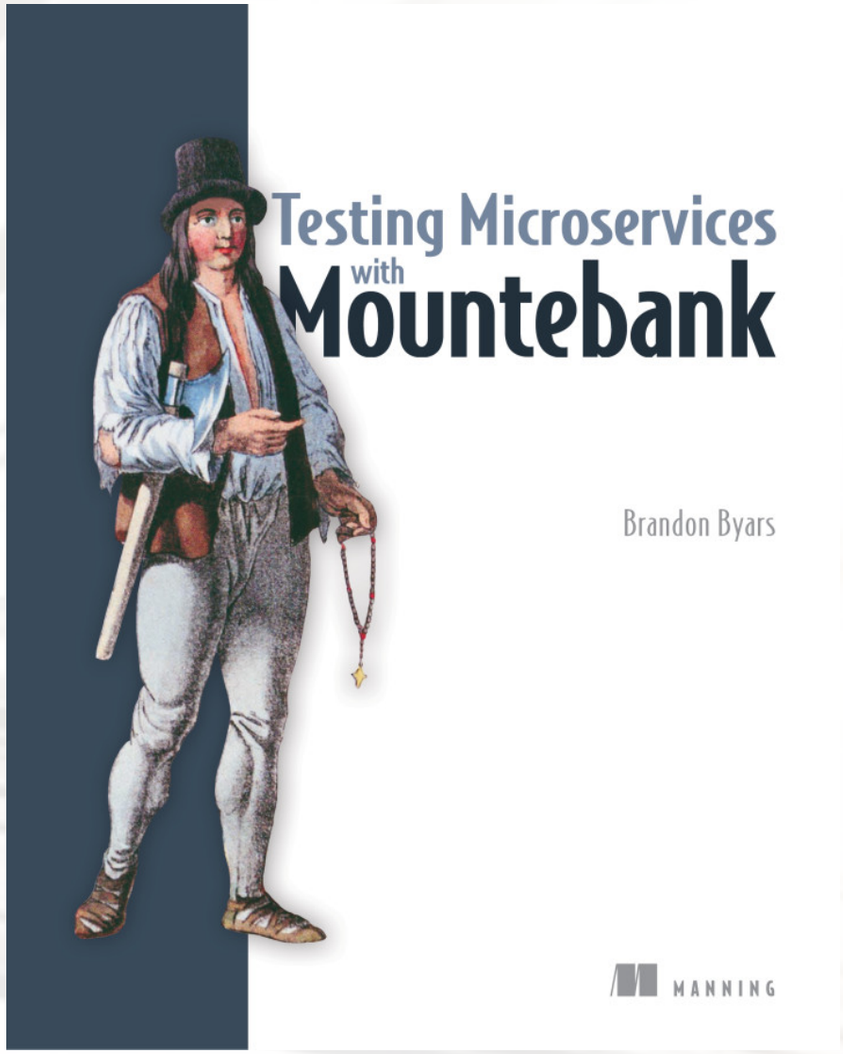
{ "reqId": 90328, "name": "Alph@ Bot", "price": 33.95 }

expected value

HTTP/1.1 **400**
Date: Sun, 05 Apr 2020 10:10:10 GMT
Content-Type: application/json

{ "message": "Alph@ Bot has invalid characters", "reqId": 90328 }

Books to Read and Practice



https://www.manning.com/books/testing-microservices-with-mountebank