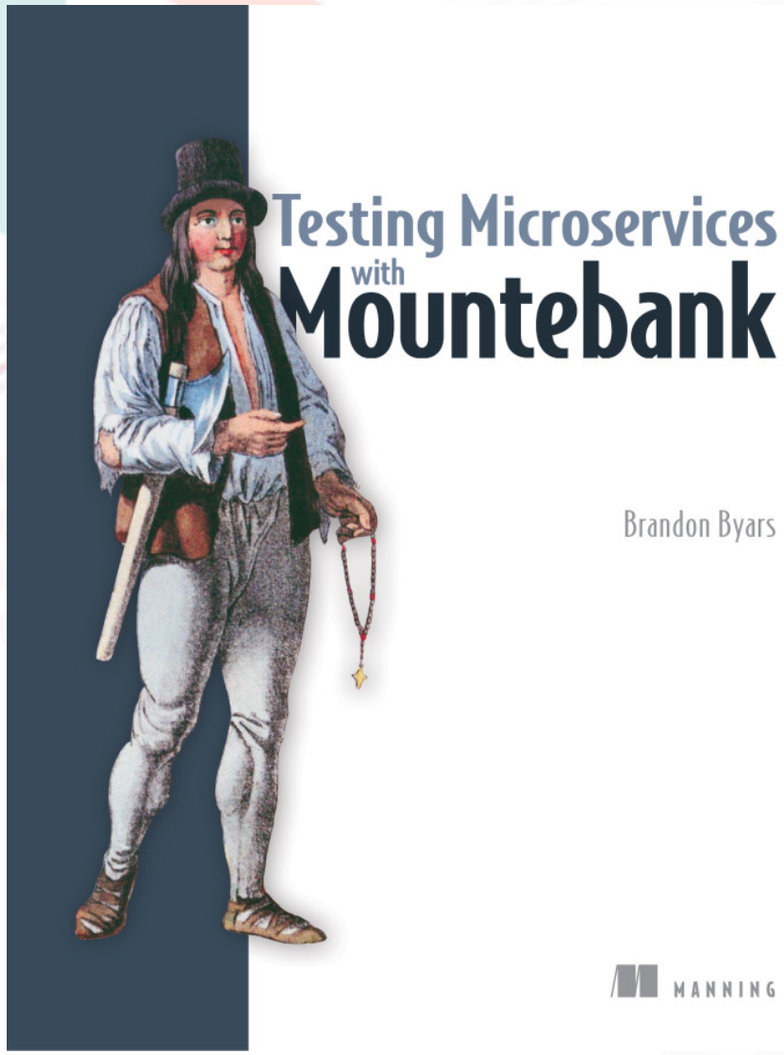
จำลองระบบเพื่อใช้ในการทดสอบ ด้วย

Mountebank 101



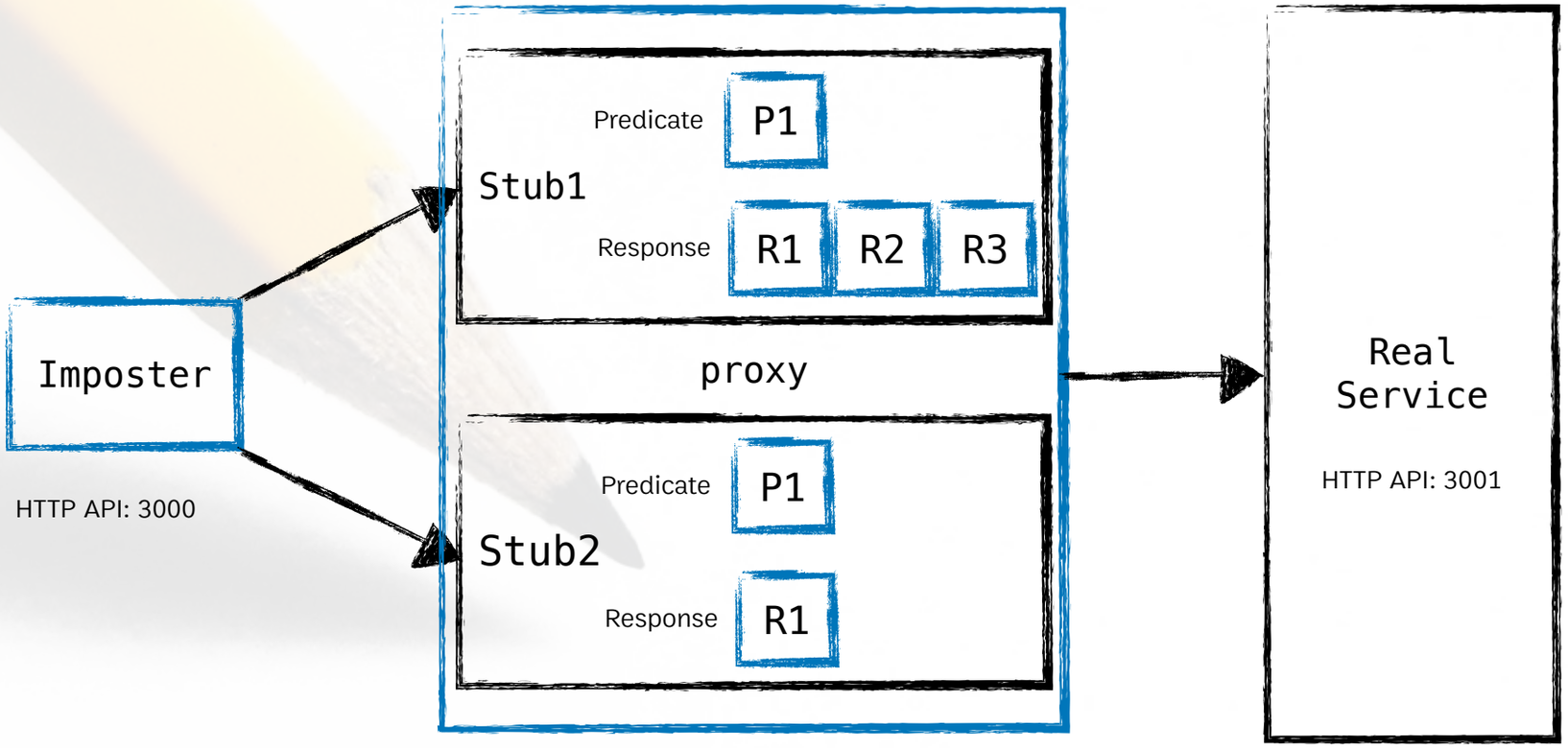
- Hello, World! Mountebank
- Predicates
- Behavior and Programming mountebank
- Adding Behaviors
- Record/Replay

Day5: Record/Replay

Understand Proxy

- Using proxy responses to capture real responses automatically
- Replaying the saved responses with the correct predicates

```
{  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
      "predicates": [],
      "responses": [{
          "responses"  [
        {
          "proxy": { "to": "http://localhost:3001" }
        }
      ]
      }]
    }
  ]
}
```



from: Testing Microservice with Mountebank page 131

Setting Up A Proxy

Start Real Service and Proxy Service

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": { "to": "http://localhost:8888" }
          }
        ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile proxy.json
```

A Real Server

```
{
  "protocol": "http",
  "port": 8888,
}
```

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Call service with postman

request value

GET /items/1 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/2 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Proxy Mode

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "mode": "proxyAlways"
            }
          }
        ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile proxy-mode.json
```

Proxy Mode:

- proxyOnce
- proxyAlways
- proxyTransparency

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

http://localhost:2525/imposters/3000

Call service with postman

request value

GET /items/1 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/2 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Generating the correct predicates

Creating Predicates with predicateGenerators: Path

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "predicateGenerators": [
                {
                  "matches": {
                  "path": true
                }
              }
            ]
          }
        }
      ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile predicate-generators.json
```

Predicate Matches:

- **path**
- query
- body

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

```
http://localhost:2525/imposters/3000
```

Call service with postman

request value

GET /items/1 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/2 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Creating Predicates with predicateGenerators: Query

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "predicateGenerators": [
                {
                  "matches": {
                  "path": true,
                  "query": true
                }
              }
            ]
          }
        }
      ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile predicate-generators.json
```

Predicate Matches:

- path
- **query**
- body

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

http://localhost:2525/imposters/3000

Call service with postman

request value

GET /items/1?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/2?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3?q=hello&p=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Creating Predicates with predicateGenerators: Specific Query

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "predicateGenerators": [
                {
                  "matches": {
                  "path": true,
                  "query": { "q": true }
                }
              }
            ]
          }
        }
      ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile predicate-generators.json
```

Predicate Matches:

- path
- **query**
- body

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

http://localhost:2525/imposters/3000

Call service with postman

request value

GET /items/1?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/2?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3?q=hello&p=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Creating Predicates with predicateGenerators: Body

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "predicateGenerators": [
                {
                  "matches": {
                  "path": true,
                  "query": true
                  }
                },
                {
                  "matches": {
                  "body": true
                  }
                }
              }
            ]
          }
        }
    ]
  }
```

config directory

start Mountebank: unix/windows

```
mb start --configfile predicate-generators.json
```

Predicate Matches:

- path
- query
- **body**

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

http://localhost:2525/imposters/3000

Call service with postman

request value

GET /items/1?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "name": "hello" }

request value

GET /itemS/1?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "name": "hello" }

request value

GET /items/2?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "name": "hello" }

request value

GET /items/3?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "name": "hello" }

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Creating Predicates with predicateGenerators: CaseSensitive

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "predicateGenerators": [
                {
                  "matches": {
                  "path": true
                  },
                  "caseSensitive": true
                }
              ]
            }
          }
        ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile predicate-generators.json
```

Predicate Matches:

- **path**
- **query**
- body

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

http://localhost:2525/imposters/3000

Call service with postman

request value

GET /items/1 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /itemS/1 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/2 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

request value

GET /items/3 HTTP/1.1
HOST localhost:3000
Content-Type: application/json

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Creating Predicates with predicateGenerators: JSONPath

A Stub Proxy

```
{
  "protocol": "http",
  "port": 3000,
  "stubs": [
    {
        "responses": [
          {
            "proxy": {
              "to": "http://localhost:8888",
              "predicateGenerators": [
                {
                  "matches": {
                    "path": true
                  }
                },
                {
                  "matches": {
                    "body": true
                  },
                  "jsonpath": {
                    "selector": "$.name"
                  }
                },
            ]
          }
        }
      ]
    }
  ]
}
```

config directory

start Mountebank: unix/windows

```
mb start --configfile predicate-generators.json
```

Predicate Matches:

- path
- query
- **body**

real-service directory

start Mountebank: unix/windows

```
mb start --allowInjection --port 2000 --configfile toy-service.json
```

Take a look at:

http://localhost:2525/imposters/3000

Call service with postman

request value

GET /items/1?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "id": 1, "name": "hello" }

request value

GET /items/2?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "id": 2,"name": "hello" }

request value

GET /items/3?q=hello HTTP/1.1
HOST localhost:3000
Content-Type: application/json

{ "id": 3, "name": "hello" }

Postman: request with

HTTP Method

GET

URL

http://localhost:3000/items/1

Take a look at:

proxy terminal

Take a look at:

real-service terminal

Take a look at:

http://localhost:2525/imposters/3000

Ways to replay a proxy

Replay And Save Proxy

config directory: **open new terminal**
start Mountebank: unix/windows

```
mb replay
```

Take a look at:

```
http://localhost:2525/imposters/3000
```

config directory
start Mountebank: unix/windows

```
mb save --savefile imposters.json --removeProxies
```

Take a look at:

```
imposters.json
```

Tricks

Refactor with Stringify

```
{
    "is": {
      "body": {
        "id": "$ID",
        "name": "43 Piece Dinner Set",
        "price": 12.95
       }
     }
}
```

```
{
    "is": {
      "body": "<%- stringify(filename, 'template') %>"     }
}
```

CORS: Cross-origin Resource Sharing

```
{
  "protocol": "http",
  "port": 3000,
  "allowCORS": true
  "stubs": [
    {
      "predicates": [
        {                    ....                    }
      ],
      "responses": [
        {                    ....                    }
      ]
    }
  ]
}
```

Use 3rd Party Library

```
{
        "is": {
          "statusCode": 200,
          "body": {
            "greeting": "Hello, World!",
            "timestamp": "nothing"
          },
          "headers": {
            "Content-Type": "application/json"
          }
        },
        "_behaviors": {
          "decorate": "<%- stringify(filename, 'timeStamp.js') %>"
        }
}
```

decoration

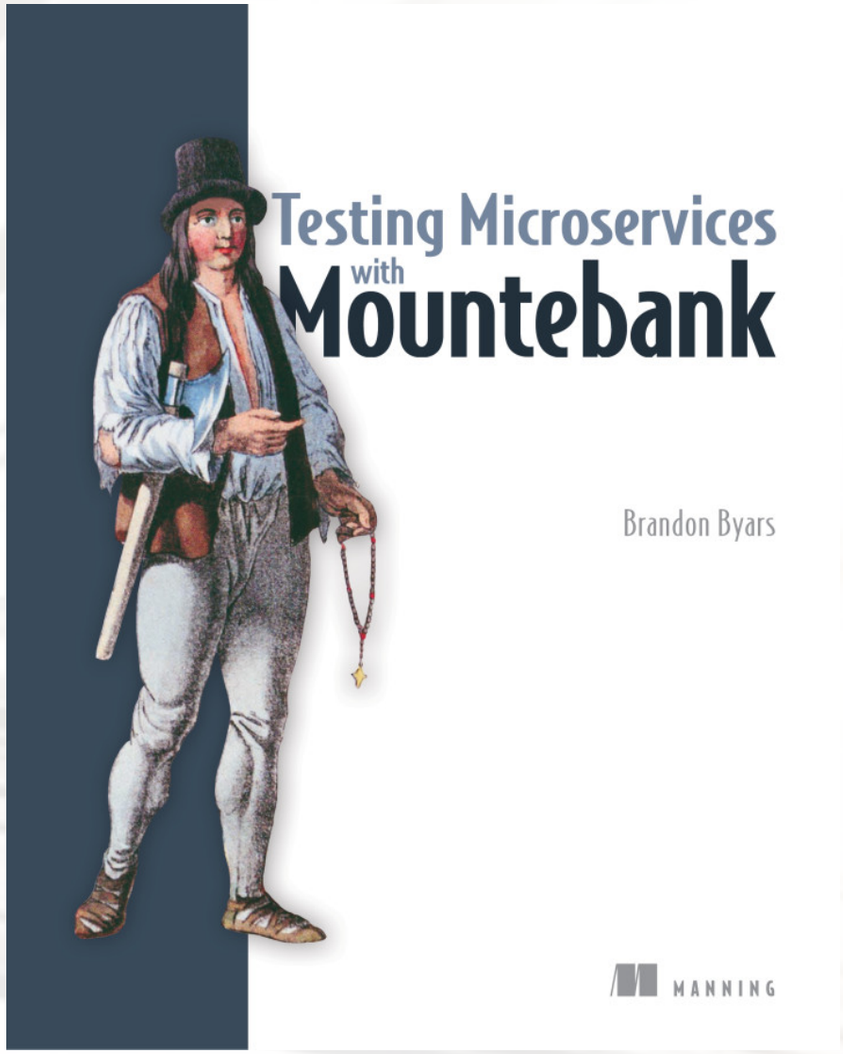
start Mountebank: unix/windows

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

```
function (request, response, logger) {
    response.body.timestamp =
'2018-12-03T10:57:37.842+07:00';

    const path = require('path');
    const dateFormat = require(path.resolve('node_modules/dateformat/lib/dateformat'));
    response.body.ldatetime = dateFormat(new Date(), "yyyy-mm-dd'T'HH:MM:ss.l+07:00");
    response.body.date = dateFormat(new Date(), "yyyy-mm-dd HH Z o");
    response.body.time = dateFormat(new Date(), "HHMMss Z o");
    response.body.longtime = dateFormat("longTime");
}
```

Books to Read and Practice



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