

# Web Engineering API Document

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## 1 Introduction

The following document contains all the API calls and information about these calls to better help you understand and use the API.

## 2 Resources

### 2.1 Airports

#### 2.1.1 Resource description

Represents information about airports.

#### 2.1.2 Endpoints and methods

- GET \airports
  - Retrieve all available airports.
  - Parameters:
    - \* optional: content-type(JSON/XML, default: JSON)
  - Sample request: GET \airports
  - Sample response:

```
1      {"airports": [  
2          {"code": "ATL", "name": Atlanta, GA:  
            Hartsfield-Jackson Atlanta  
            International"},  
3          {"code": "BOS", "name": "Boston, MA: Logan  
            International"}  
4      ]}
```

- GET \airports\{airport}\carriers

- Retrieve all carriers operating at a specific airport.
- Parameters:
  - \* airport code
  - \* optional: content-type(JSON/XML, default: JSON)
- Sample request: GET \airports\1\carriers
- Sample response:

```

1      {"carriers": [
2          {"code": "B6", "name": "JetBlue Airways"},
3          {"code": "CO", "name": "Continental Air
           Lines Inc."},
4          ...
5      ]}

```

## 2.2 Carriers

### 2.2.1 Resource description

Represents information about carriers and their flights.

### 2.2.2 Endpoints and methods

- GET \carriers
  - Retrieve all carriers.
  - Parameters:
    - \* optional: content-type(JSON/XML, default: JSON)
  - Sample request: GET \carriers
  - Sample response:

```

1      {"carriers": [
2          {"code": "AA", "name": "American Airlines
           Inc."},
3          {"code": "AS", "name": "Alaska Airlines Inc
           ."},
4      ]}

```

- GET \carriers\{carrier}\statistics
  - Retrieve statistics of flights for a specific carrier, for a given airport and a given month/all months.
  - Parameters:

- \* airport: airport code
- \* optional: month (default: all months)
- \* optional: content-type(JSON/XML, default: JSON)
- Sample request: GET \carriers\1\statistics?airport=ATL
- Sample response:

```

1      {"statistics": {
2          "flights": {
3              "cancelled": 0,
4              "on time": 44,
5              "total": 60,
6              "delayed": 16,
7              "diverted": 0
8          },
9          "# of delays": {
10             "late aircraft": 1,
11             "weather": 0,
12             "security": 0,
13             "national aviation system": 11,
14             "carrier": 3
15         },
16         "minutes delayed": {
17             "late aircraft": 19,
18             "weather": 0,
19             "carrier": 460,
20             "security": 14,
21             "total": 796,
22             "national aviation system": 303
23         }
24     }}

```

- POST \carriers\{carrier}\statistics

- Add statistics for flights of a specific carrier, for a given airport and a given month/all months.
- Parameters:
  - \* optional: content-type(JSON/XML, default: JSON)
- Sample request body:

```

1      {"data": {
2          "carrier": "AA",
3          "airport": "ATL",
4          "statistics": {

```

```

5      "flights": {
6          "cancelled": 3
7      },
8      "# of delays": {
9
10     },
11     "minutes delayed": {
12
13     }
14 }
15 }}

```

- PUT \carriers\{carrier}\statistics

- Update statistics for flights of a specific carrier, for a given airport and a given month/all months.
- Parameters:
  - \* optional: month (default: all months)
  - \* optional: content-type(JSON/XML, default: JSON)
- Sample request body:

```

1      {"data": {
2          "carrier": "AA",
3          "airport": "ATL",
4          "statistics": {
5              "flights": {
6                  "cancelled": 3
7              },
8              "# of delays": {
9
10             },
11             "minutes delayed": {
12
13             }
14         }
15     }}

```

- DELETE \carriers\{carrier}\statistics

- Delete statistics for flights of a specific carrier, for a given airport and a given month/all months.
- Parameters:
  - \* airport: airport code

- \* optional: month (default: all months)
- \* optional: content-type(JSON/XML, default: JSON)

- Sample request body:

```

1      {"data": {
2          "carrier": "AA",
3          "airport": "ATL"
4      }}

```

• GET \carriers\{carrier}\performance

- For a given carrier, retrieve the number of flights that have been delayed, on-time or cancelled, for a given airport and a given month/all months .

- Parameters:

- \* airport: airport code
- \* optional: month (default: all months)
- \* optional: content-type(JSON/XML, default: JSON)

- Sample request: GET \carriers\1\performance?airport=ATL

- Sample response:

```

1      {"# of delays": {
2          "late aircraft": 1,
3          "weather": 0,
4          "security": 0,
5          "national aviation system": 11,
6          "carrier": 3
7      }}

```

• GET \carriers\delays

- Retrieve the number of minutes delay per carrier, given carrier specific reasons for delay, specific month/all months and a specific airport/all airports

- Parameters:

- \* optional: carrier specific reasons (default: all reasons)
- \* optional: airport code
- \* optional: month (default: all months)
- \* optional: content-type(JSON/XML, default: JSON)

- Sample request: GET \carriers\delays?carrier=yes

- Sample response:

```

1      { "minutes delayed": {
2          "carrier": 14,
3          "late aircraft": 21
4      }}

```

- GET \carriers\delays\statistics

- Retrieve descriptive statistics (mean, median, std. dev) for carrier specific delays for a flight between any two airports for a specific carrier/all carriers

- Parameters:

- \* airport1: airport code
    - \* airport2: airport code
    - \* optional: carrier (default: all carriers)
    - \* optional: content-type(JSON/XML, default: JSON)

- GET \carriers\delays\statistics?airport1=ATL&airport2=BOS

- Sample response:

```

1      { "descriptive statistics": [
2          { "carrier_code" : "ATL",
3            "mean": 14,
4            "medium": 16,
5            "standard deviation": 2
6          },
7          { "code": B05
8          }
9      ]}

```