

# Portfolio Project Documentation

## Deployed Application URL:

\* This is also where users can sign up for an account or login

<https://portfolio-407508.uw.r.appspot.com/>

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# **1. Data Model**

## **1.1 Entity Property Tables**

\* Is Required refers to if property is required in creation POST request

### **Aircraft**

	<b>Data Type</b>	<b>Is Required?</b>	<b>Initialization</b>	<b>Valid Values</b>
<b>id</b>	Number	No	'generated integer'	n/a
<b>type</b>	String	Yes	n/a	Any string value
<b>capacity</b>	Number	Yes	n/a	Any numeric value
<b>registration</b>	String	Yes	n/a	Any string value
<b>cans</b>	Array	No	empty array [ ]	n/a
<b>owner</b>	String	No	'user sub value'	n/a
<b>self</b>	String	No	'entity reference'	n/a

### **Cans**

	<b>Data Type</b>	<b>Is Required?</b>	<b>Initialization</b>	<b>Valid Values</b>
<b>id</b>	Number	No	'generated integer'	n/a
<b>type</b>	String	Yes	n/a	Any string value
<b>weight</b>	Number	Yes	n/a	Any numeric value
<b>destination</b>	String	Yes	n/a	Any string value

<b>carrier</b>	Array	No	null	n/a
<b>self</b>	String	No	'entity reference'	n/a

## Users

	<b>Data Type</b>	<b>Is Required?</b>	<b>Initialization</b>	<b>Valid Values</b>
<b>id</b>	Number	No	'user id'	n/a
<b>email</b>	String	Yes	n/a (user email from signup)	n/a
<b>time_created</b>	String	Yes	n/a	n/a
<b>sub</b>	String	Yes	'user id'	n/a

## 1.2 Relationship Between Aircraft and Cans

There is a meaningful relationship between Aircraft entities and Can entities. The interaction is described as follows:

### Loading Cans onto Aircraft

Aircraft entities have the capability to carry Can entities, and these loaded cans are stored in the 'cans' property array of the Aircraft. An individual Can entity may only be loaded on a single Aircraft at a given time.

### Structure of the 'cans' Property Array

The 'cans' property array in the Aircraft entity holds essential information about the loaded cans. Each element within the array includes:

- **'self'**: The unique identifier and reference to the Can entity.
- **'id'**: The identification associated with the loaded can.

### Updating Can Properties

Upon loading a Can onto an Aircraft, the 'carrier' property of the Can entity is automatically updated. This 'carrier' property now contains references to the 'self' and 'id' properties of the Aircraft to which it is loaded.

## 1.3 The User Entity Model

### **Unique Identifier**

The unique identifier for users is derived from the 'user\_id' associated with a registered user within the Auth0 tenant. This identifier serves as a distinct reference point for each user in the data model.

### **Requests Involving User Identifier**

In requests where a user identifier is required, a valid JSON Web Token (JWT) must be supplied as a bearer token within the authorization header. Particularly for requests pertaining to the modification, retrieval, or deletion of an entity associated with a specific user, the provided JWT must belong to the owner of the entity.

### **JWT to User Identifier Mapping**

The application maps a supplied JWT to the "user sub value" to identify the user associated with the token.

### **Relationship Between User and Aircraft**

For the creation of an Aircraft entity, a valid JWT must be supplied, and it must belong to a User who is registered on the server using Auth0. The "user sub value" extracted from the provided JWT is then associated with the Aircraft entity as its 'owner' property.

## **2. Aircraft API Endpoints**

### **2.1 Create an Aircraft (POST)**

Allows you to create an Aircraft.

#### **Path**

/aircraft

#### **Request**

##### **Headers:**

Authorization: Bearer [Valid\_User\_JWT]

##### **Path Parameters:**

None

##### **Request Body:**

Required

Request Body Format:  
JSON

Request JSON Attributes:

Name	Description	Type	Optional?
type	The model of the aircraft.	string	no
capacity	Amount of cans that can be loaded to aircraft.	number	no
registration	The n-number of the aircraft.	string	no

**Request Body Example**

```
{  
  "type": "Boeing 767",  
  "capacity": 24,  
  "registration": "N4567"  
}
```

**Response**

Response Body Format:  
JSON

Response Statuses:

Outcome	Status Code	Message
Success	201 Created	
Failure	400 Bad Request	'Error': 'The request object is missing at least one of the required attributes'
Failure	400 Bad Request	'Error': 'The request object contains an invalid data type'
Failure	401 Unauthorized	'Error': 'Token verification failed'

## Response Examples

### Status Code 201 Created:

```
{
  "id": 5104575795167232,
  "type": "Boeing 767",
  "capacity": 24,
  "registration": "N4567",
  "cans": [],
  "owner": "auth0|655c3e4517b4bdb5010dd608",
  "self": "https://portfolio-407508.uw.r.appspot.com/aircraft/5104575795167232"
}
```

### Status Code 400 Bad Request (missing attribute):

```
{
  "Error": "The request object is missing at least one of the required attributes"
}
```

### Status Code 400 Bad Request (invalid attribute):

```
{
  "Error": "The request object contains an invalid data type"
}
```

## 2.2 Get an Aircraft (GET)

Allows you to get an existing Aircraft belonging to the JWT

### **Path**

/aircraft/:aircraft\_id

### **Request**

#### Path Parameters:

Name	Description	Optional?
aircraft_id	ID of the aircraft	no

#### Request Body:

None

### Request Headers:

Authorization: Bearer [Valid\_User\_JWT]

Key	Value	Optional?
Accept	text/html, applications/json	yes

### **Response**

#### Response Body Format:

JSON or HTML

#### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	401 Unauthorized	'Error': 'Token verification failed'
Failure	401 Unauthorized	'Error': 'Not authorized to modify or view this element'
Failure	404 Not Found	'Error': 'No aircraft with this aircraft_id exists'
Failure	406 Not Acceptable	'Error': 'Endpoint does not support that MIME type for header Accept (supported types: application/json, text/html)'
Failure	415 Unsupported Media Type	'Error': 'Endpoint does not support that MIME type for header Content-Type (supported types: application/json, text/html)'

### **Response Examples**

#### Status Code 200 OK (applications/json):

```
{  
  "id": 5927235508764672,  
  "type": "Boeing 767",  
  "capacity": 24,  
  "registration": "N4567",  
  "cans": [],  
}
```

```
    "self": "https://portfolio-407508.uw.r.appspot.com/aircraft/5927235508764672"
  }
}
```

### Status Code 200 OK (text/html):

```
<html>
<ul>
  <li>Type: Boeing 767</li>
  <li>Capacity: 24</li>
  <li>Registration: N4567</li>
</ul>

</html>
```

### Status Code 401 Unauthorized:

```
{
  "Error": "Not authorized to modify or view this element"
}
```

### Status Code 404 Not Found:

```
{
  "Error": "No aircraft with this aircraft_id exists"
}
```

### Status Code 406 Not Acceptable:

```
{
  "Error": "Endpoint does not support that MIME type for header Accept (supported types: application/json, text/html)"
}
```

### Status Code 415 Unsupported Media Type:

```
{
  "Error": "Endpoint does not support that MIME type for header Content-Type (supported types: application/json, text/html)"
}
```

## 2.3 Get all Aircraft (GET)

Allows you to retrieve all Aircraft belonging to the JWT

### **Path**

/aircraft



## Request

### Path Parameters:

None

### Request Body:

None

### Request Headers:

Authorization: Bearer [Valid\_User\_JWT]

## Response

### Response Body Format:

JSON

### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	401 Unauthorized	'Error': 'Token verification failed'
Failure	404 Not Found	'Error'

## Response Examples

### Status Code 200 OK:

```
{
  "offset": 0,
  "limit": 2,
  "aircraft": [
    {
      "id": "5104575795167232",
      "type": "Boeing 767",
      "capacity": 24,
      "registration": "N4567",
      "cans": [],
      "owner": "auth0|655c3e4517b4bdb5010dd608",
      "self":
"https://portfolio-407508.uw.r.appspot.com/aircraft/5104575795167232"
    }
  ]
}
```

```

    },
    {
      "id": "5384198433013760",
      "type": "McDonnell Douglas MD11",
      "capacity": 22,
      "registration": "N7321",
      "cans": [],
      "owner": "auth0|655c3e4517b4bdb5010dd608",
      "self":
        "https://portfolio-407508.uw.r.appspot.com/aircraft/5384198433013760"
    }
  ],
  "next": "/aircraft/?limit=2&page=2"
}

```

#### Status Code 401 Unauthorized:

```

{
  "Error": "Not authorized to modify or view this element"
}

```

## **2.4 Modify an Aircraft (PATCH)**

Allows you to modify a single aircraft entity by ID

Only the specified attributes are updated

### **Path**

/aircraft/:aircraft\_id

### **Request**

#### Request Headers:

Authorization: Bearer [Valid\_User\_JWT]

#### Path Parameters:

Name	Description	Optional?
aircraft_id	ID of the aircraft to modify	no

#### Request Body:

Required

Request Body Format:  
JSON

Request JSON Attributes:

Name	Description	Type	Optional?
type	The model of the aircraft.	string	yes
capacity	Amount of cans that can be loaded to aircraft.	number	yes
registration	The n-number of the aircraft.	string	yes

**Request Body Example**

```
{  
  "type": "Airbus A300",  
  "capacity": 22,  
  "registration": "N1234"  
}
```

**Response**

Response Body Format:  
JSON

Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	400 Bad Request	'Error': 'The request object contains an invalid data type'
Failure	401 Unauthorized	'Error': 'Token verification failed'
Failure	401 Unauthorized	'Error': 'Not authorized to modify or view this element'
Failure	404 Not Found	'Error': 'No aircraft with this aircraft_id exists'
Failure	406 Not Acceptable	'Error': 'Endpoint does not support that MIME type for header Accept (supported types: application/json)'
Failure	415 Unsupported	'Error': 'Endpoint does not support that MIME type for

	Media Type	header Content-Type (supported types: application/json)
--	------------	---

## Response Examples:

### Status 200 OK:

```
{
  "id": 5927235508764672,
  "type": "Airbus A300",
  "capacity": 22,
  "registration": "N1234",
  "cans": [],
  "owner": "auth0|655c3e4517b4bdb5010dd608",
  "self": "https://portfolio-407508.uw.r.appspot.com/aircraft/5927235508764672"
}
```

### Status Code 401 Unauthorized:

```
{
  "Error": "Not authorized to modify or view this element"
}
```

### Status 404 Not Found

```
{
  "Error": "No aircraft with this aircraft_id exists"
}
```

## 2.5 Delete an Aircraft (DELETE)

Delete an aircraft

### Path

/aircraft/:aircraft\_id

### Path Parameters:

Name	Description	Optional?
aircraft_id	ID of the aircraft	no

## Request

### Request Headers:

Authorization: Bearer [Valid\_User\_JWT]

### Request Body:

None

## Response

### Response Body Format:

JSON

### Response Statuses:

Outcome	Status Code	Message
Success	204	
Failure	400	'Error': 'An error occurred while deleting the aircraft'
Failure	401 Unauthorized	'Error': 'Token verification failed'
Failure	401 Unauthorized	'Error': 'Not authorized to modify or view this element'
Failure	404	'Error': 'No aircraft with this aircraft_id exists'

## Response Examples:

### Status Code 401 Unauthorized:

```
{  
  "Error": "Not authorized to modify or view this element"  
}
```

### Status 404

```
{  
  "Error": "No aircraft with this aircraft_id exists"  
}
```

## **2.6 Assign a Can to an Aircraft (PUT)**

Allows you to assign a Can to an Aircraft

### **Path**

/aircraft/:aircraft\_id/cans/:can\_id

### **Request**

Request Headers:

Authorization: Bearer [Valid\_User\_JWT]

Path Parameters:

Name	Description	Optional?
can_id	ID of the Can	no
aircraft_id	ID of the Aircraft for the can to be added to	no

Request Body:

None

Request Body Format:

JSON

### **Response**

Response Body Format:

JSON

Response Statuses:

Outcome	Status Code	Message
Success	204 Success	
Failure	400 Bad Request	
Failure	401 Unauthorized	'Error': 'Token verification failed'

Failure	401 Unauthorized	'Error': 'Not authorized to modify or view this element'
Failure	403 Forbidden	'Error': 'The can is already on another aircraft'
Failure	404 Not Found	'Error': 'The specified aircraft and/or can do not exist'

## Response Examples:

### Status 403 Forbidden

```
{
  "Error": "The can is already on another aircraft"
}
```

### Status 404 Not Found

```
{
  "Error": "The specified aircraft and/or can do not exist"
}
```

## **2.7 Remove a Can from an Aircraft (DELETE)**

Allows you to remove a Can from an Aircraft

### **Path**

/aircraft/:aircraft\_id/cans/:can\_id

### **Request**

#### Request Headers:

Authorization: Bearer [Valid\_User\_JWT]

#### Path Parameters:

Name	Description	Optional?
can_id	ID of the Can	no
aircraft_id	ID of the Aircraft for the can to be added to	no

Request Body:

None

Request Body Format:

JSON

## **Response**

Response Body Format:

JSON

Response Statuses:

Outcome	Status Code	Message
Success	204 Success	
Failure	400 Bad Request	
Failure	401 Unauthorized	'Error': 'Token verification failed'
Failure	401 Unauthorized	'Error': 'Not authorized to modify or view this element'
Failure	404 Not Found	'Error': 'No aircraft with this aircraft_id is loaded with the can with this can_id'

## **Response Examples:**

Status 404 Not Found

```
{
  "Error": "No aircraft with this aircraft_id is loaded with the can with this can_id"
}
```

## **3. Can API Endpoints**

### **3.1 Create a Can (POST)**

Allows you to create a Can.



## Path

/cans

## Request

Path Parameters:

None

Request Body:

Required

Request Body Format:

JSON

Request JSON Attributes:

Name	Description	Type	Optional?
type	The type of can to create.	string	no
weight	The weight of the can in lbs.	number	no
destination	The destination airport of the can.	string	no

## Request Body Example

```
{  
  "type": "AMP",  
  "weight": 3254,  
  "destination": "Portland"  
}
```

## Response

Response Body Format:

JSON

Response Statuses:

Outcome	Status Code	Message
Success	201 Created	

Failure	400 Bad Request	'Error': 'The request object is missing at least one of the required attributes'
Failure	400 Bad Request	'Error': 'The request object contains an invalid data type'

## Response Examples

### Status Code 201 Created:

```
{
  "id": 6231706277249024,
  "type": "AMP",
  "weight": 3254,
  "destination": "Portland",
  "carrier": null,
  "self": "https://portfolio-407508.uw.r.appspot.com/cans/6231706277249024"
}
```

### Status Code 400 Bad Request (invalid attribute):

```
{
  "Error": "The request object contains an invalid data type"
}
```

## 3.2 Get a Can (GET)

Allows you to get an existing Can

### Path

/cans/:can\_id

### Request

#### Path Parameters:

Name	Description	Optional?
can_id	ID of the can	no

#### Request Body:

None

Request Headers:

None

## Response

Response Body Format:

JSON

Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	404 Not Found	'Error': 'No can with this can_id exists'

## Response Examples

Status Code 200 OK (applications/json):

```
{
  "id": 5168126949851136,
  "type": "AMP",
  "weight": 3254,
  "destination": "Portland",
  "carrier": null,
  "self": "https://portfolio-407508.uw.r.appspot.com/cans/5168126949851136"
}
```

Status Code 404 Not Found:

```
{
  "Error": "No can with this can_id exists"
}
```

## 3.3 Get all Cans (GET)

Allows you to retrieve all Cans from the server

## Path

/cans

## Request

### Path Parameters:

None

### Request Body:

None

### Request Headers:

None

## Response

### Response Body Format:

JSON

### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	404 Not Found	'Error'

## Response Examples

### Status Code 200 OK:

```
{
  "offset": 0,
  "limit": 3,
  "cans": [
    {
      "id": "4801335601922048",
      "type": "AMP",
      "weight": 3254,
      "destination": "Portland",
      "carrier": null,
    }
  ]
}
```

```

      "self": "https://portfolio-407508.uw.r.appspot.com/cans/4801335601922048"
    },
    {
      "id": "4836104234598400",
      "type": "AMP",
      "weight": 3254,
      "destination": "Portland",
      "carrier": null,
      "self": "https://portfolio-407508.uw.r.appspot.com/cans/4836104234598400"
    },
    {
      "id": "5168126949851136",
      "type": "AMP",
      "weight": 3254,
      "destination": "Portland",
      "carrier": null,
      "self": "https://portfolio-407508.uw.r.appspot.com/cans/5168126949851136"
    }
  ],
  "next": "/cans/?limit=3&page=2"
}

```

### **3.4 Get all Cans on a given Aircraft (GET)**

List all of the Cans currently on a given Aircraft

#### **Path**

/aircraft/:aircraft\_id/cans

#### **Path Parameters:**

Name	Description	Optional?
aircraft_id	ID of the aircraft	No
can_id	ID of the can	No

#### **Request**

##### **Request Headers:**

Authorization: Bearer [Valid\_User\_JWT]

### Request Body:

None

### **Response**

#### Response Body Format:

JSON

#### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	401 Unauthorized	'Error': 'Token verification failed'
Failure	401 Unauthorized	'Error': 'Not authorized to modify or view this element'
Failure	404 Not Found	'Error' 'No aircraft with this aircraft_id exists'

### **Response Examples:**

#### Status Code 200 OK

```
{
  "cans": [
    {
      "id": "5751558595674112",
      "type": "AMP",
      "weight": 3254,
      "destination": "Portland",
      "self": "https://portfolio-407508.uw.r.appspot.com/cans/5751558595674112"
    }
  ]
}
```

#### Status Code 404 Not Found

```
{
  "Error": "No aircraft with this aircraft_id exists"
}
```

### **3.5 Modify a Can (PATCH)**

Allows you to modify a single can entity by ID

Only the specified attributes are updated

#### **Path**

/cans/:can\_id

#### **Request**

##### Path Parameters:

Name	Description	Optional?
can_id	ID of the can to modify	no

##### Request Body:

Required

##### Request Body Format:

JSON

##### Request JSON Attributes:

Name	Description	Type	Optional?
type	The type of can to create.	string	yes
weight	The weight of the can in lbs.	number	yes
destination	The destination airport of the can.	string	yes

#### **Request Body Example**

```
{  
  "type": "AAD",  
  "weight": 1476,  
  "destination": "Los Angeles"  
}
```

## Response

### Response Body Format:

JSON

### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	400 Bad Request	'Error': 'The request object contains an invalid data type'
Failure	404 Not Found	'Error': 'No can with this can_id exists'
Failure	406 Not Acceptable	'Error': 'Endpoint does not support that MIME type for header Accept (supported types: application/json)'
Failure	415 Unsupported Media Type	'Error': 'Endpoint does not support that MIME type for header Content-Type (supported types: application/json)'

## Response Examples:

### Status 200 OK:

```
{
  "id": 5751558595674112,
  "type": "AAD",
  "weight": 1476,
  "destination": "Los Angeles",
  "carrier": null,
  "self": "https://portfolio-407508.uw.r.appspot.com/cans/5751558595674112"
}
```

### Status 404 Not Found

```
{
  "Error": "No can with this can_id exists"
}
```



### **3.6 Delete a Can (DELETE)**

Delete an aircraft

#### **Path**

/cans/:can\_id

#### **Path Parameters:**

Name	Description	Optional?
can_id	ID of the can	no

#### **Request**

##### **Request Headers:**

None

##### **Request Body:**

None

#### **Response**

##### **Response Body Format:**

JSON

##### **Response Statuses:**

Outcome	Status Code	Message
Success	204	
Failure	400	'Error': 'An error occurred while deleting the aircraft'
Failure	404	'Error': 'No can with this can_id exists'

#### **Response Examples:**

## Status 404

```
{  
  "Error": "No can with this can_id exists"  
}
```

## 4. User API Endpoints

### 4.1 Get a User (GET)

Allows you to get an existing user

#### **Path**

/users/:user\_id

#### **Request**

##### Path Parameters:

Name	Description	Optional?
user_id	ID of the user	no

##### Request Body:

None

##### Request Headers:

None

#### **Response**

##### Response Body Format:

JSON

##### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	

Failure	404 Not Found	'Error': 'No user with this user_id exists'
Failure	406 Not Acceptable	'Error': 'Endpoint does not support that MIME type for header Accept (supported types: application/json)'
Failure	415 Unsupported Media Type	'Error': 'Endpoint does not support that MIME type for header Content-Type (supported types: application/json)'

## Response Examples

### Status Code 200 OK (applications/json):

```
{
  "email": "foremanb@oregonstate.edu",
  "time_created": "2023-12-11T07:00:21.907Z",
  "sub": "auth0|655bfb9687cb3003c8700a68"
}
```

### Status Code 404 Not Found:

```
{
  "Error": "No user with this user_id exists"
}
```

## 4.2 Get all Users (GET)

Allows you to retrieve all Users from the server

### **Path**

/users

### **Request**

#### Path Parameters:

None

#### Request Body:

None

#### Request Headers:

None

## Response

### Response Body Format:

JSON

### Response Statuses:

Outcome	Status Code	Message
Success	200 OK	
Failure	404 Not Found	'Error'

## Response Examples

### Status Code 200 OK:

```
{
  "offset": 0,
  "limit": 5,
  "users": [
    {
      "id": "auth0|655bfb9687cb3003c8700a68",
      "email": "foremanb@oregonstate.edu",
      "time_created": "2023-12-11T07:00:21.907Z",
      "sub": "auth0|655bfb9687cb3003c8700a68"3.
    },
    {
      "id": "auth0|655c3e4517b4bdb5010dd608",
      "email": "brandeeto23@gmail.com",
      "time_created": "2023-12-11T07:01:33.118Z",
      "sub": "auth0|655c3e4517b4bdb5010dd608"
    },
    {
      "id": "google-oauth2|112374276800474475384",
      "email": "bforemana@gmail.com",
      "time_created": "2023-12-11T22:46:25.298Z",
      "sub": "google-oauth2|112374276800474475384"
    }
  ]
}
```