Boats & Loads API

Last Update: June 6, 2021. 11:00 am Pacific

URL: https://boats-loads-api.uw.r.appspot.com

Change log

Version	Change	Date
1.0	Initial version.	April 25 2021
2.0	Final version	June 6, 2021

Data Model

Boat

Property Name	Type	Description	Required
id	String	The id of the boat. Datastore automatically generates it.	Yes
name	String	Name of the boat.	Yes
type	String	Type of the boat, E.g., Sailboat, Catamaran, etc.	Yes
length	Integer	The length of the boat in feet.	Yes
loads	Array	A list of load id's from the Load entity	No

Load

Property Name	Type	Description	Required
id	String	The id of the load. Datastore automatically generates it.	Yes
volume	Integer	Volume of the load in cubic feet.	Yes
content	String	The contents of the load.	Yes
last_updated	Date	The date the load was last modified, MM/DD/YYYY	Yes
carrier	Object	Contains id and name properties of the assigned carrier from the Boat entity	No
owner	String	The owner of the load from the User user_id	Yes

User

Property Name	Type	Description	Required
user_id	String	Unique id of the user. JWT sub property	Yes
given_name	String	String. First name of the user	Yes
family_name	String	String. Last name of the user	Yes
date_created	Date	Date. The date the user was created, MM/DD/YYYY	Yes
email	String	String. The email address of the user	Yes

The user_id is the unique identifier that is obtained from the [sub] property of the supplied JSON Web Token. The JWT needs to be included as a Bearer Authorization token in the request. The user entity is related to the protected Load entity through the [owner] property. The owner property is the [user_id] of the User entity.

Create a Boat

Allows you to create a new boat.

```
POST /boats
```

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Integer	Length of the boat in feet.	Yes

Request Body Example

```
{
    "name": "Sea Witch",
     "type": "Catamaran",
    "length": 28
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing any of the 3 required attributes
Failure	406 Not Acceptable	Requested media type is not supported.
Failure	415 Unsupported Media Type	The sent media type is not supported.

Response Examples

Success

```
Status: 201 Created
{
    "id": "abc123",
    "name": "Sea Witch",
     "type": "Catamaran",
    "length": 28,
     "loads": [],
    "self": "https://boats-loads-api.uw.r.appspot.com/boats/abc123"
}
```

Failure

```
Status: 400 Bad Request
{
    "Error": "At least one of the required attributes are missing"
```

```
}
```

Status: 406 Not Acceptable

```
{
    "Error":  "Requested media type is not supported"
}
```

Status: 415 Unsupported Media Type

```
{
    "Error":  "Sent media type is not supported"
}
```

View a Boat

Allows you to view an existing boat

GET /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	Requested media type is not supported

Response Examples

Success

Status: 200 OK
```
{
    "id": "abc123",
    "name": "Sea Witch",
     "type": "Catamaran",
    "length": 28,
     "loads": [],
    "self": "https://boats-loads-api.uw.r.appspot.com/boats/abc123"
}
```

Failure

Status: 404 Not Found
```
{
    "Error":  "No boat with this boat_id exists"
}
```

Status: 406 Not Acceptable
```
{
     "Error":  "Requested media type is not supported"
}
```

View all Boats

Allows you to view all the boats. Implements pagination with a limit of 5 boats per page, and link to the "next" page of results. Includes a total boat count for the collection.

GET /boats

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	Requested media type is not supported

Response Examples

Success

```
Status: 200 OK
total_boats:   7,
boats:[
        {
            "id": "abc123",
            "name": "Sea Witch",
             "type": "Catamaran",
            "length": 28,
             "loads": [],
            "self": "https://boats-loads-api.uw.r.appspot.com/boats/abc123"
        },
        {
            "id": "def456",
            "name": "Adventure",
             "type": "Sailboat",
            "length": 50,
             "loads": [],
            "self": "https://boats-loads-api.uw.r.appspot.com/boats/def456"
        },
        {
            "id": "xyz123",
            "name": "Hocus Pocus",
             "type": "Sailboat",
            "length": 100,
             "loads": [],
            "self": "https://boats-loads-api.uw.r.appspot.com/boats/xyz123"
        },
        {
            "id": "def123456",
            "name": "Adventure",
             "type": "Sailboat",
            "length": 50,
```

```
             "loads": [],
             "self": "https://boats-loads-api.uw.r.appspot.com/boats/def123456"
        },
        {
             "id": "xyz123456",
             "name": "Hocus Pocus",
             "type": "Sailboat",
             "length": 100,
             "loads": [],
             "self": "https://boats-loads-api.uw.r.appspot.com/boats/xyz123456"
        }
    ],
next: "https://boats-loads-api.uw.r.appspot.com/boats?"cursor=123456"
```

Failure

```
Status: 406 Not Acceptable
{
     "Error":  "Requested media type is not supported"
}
```

Update a Boat

Allows you to create a new boat.

PATCH /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the boat.	No
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	No
length	Integer	Length of the boat in feet.	No

Request Body Example

```
{
    "type": "Catamaran",
    "length": 28
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	404 Not Found	There is no boat matching this boat_id
Failure	406 Not Acceptable	Requested media type is not supported.
Failure	415 Unsupported Media Type	The sent media type is not supported.

Response Examples

Success

```
Status: 201 Created
{
    "id": "abc123",
    "name": "Sea Witch",
     "type": "Catamaran",
    "length": 28,
     "loads": [],
    "self": "https://boats-loads-api.uw.r.appspot.com/boats/abc123"
}
```

Failure

```
Status: 404 Not Found
{
    "Error": "No boat with boat_id exists"
}
```

Status: 406 Not Acceptable
```
{
    "Error": "Requested media type is not supported"
}
```
Status: 415 Unsupported Media Type
```
{
    "Error": "Sent media type is not supported"
}
```

Replace a Boat

Allows you to create a new boat.

```
PUT /boats/:boat_id
```

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the boat.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Integer	Length of the boat in feet.	Yes

Request Body Example

```
{
    "name": "Sea Witch",
    "type": "Catamaran",
    "length": 28
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing any of the 3 required attributes
Failure	404 Not Found	There is no boat matching this boat_id
Failure	406 Not Acceptable	Requested media type is not supported.
Failure	415 Unsupported Media Type	The sent media type is not supported.

Response Examples

Success

```
Status: 201 Created
{
    "id": "abc123",
    "name": "Sea Witch",
     "type": "Catamaran",
    "length": 28,
     "loads": [],
    "self": "https://boats-loads-api.uw.r.appspot.com/boats/abc123"
}
```

Failure

```
Status: 400 Bad Request
{
```

```
      "Error":  "At least one of the required attributes are missing"
}
```

Status: 404 Not Found
```
{
      "Error":  "No boat with boat_id exists"
}
```

Status: 406 Not Acceptable
```
{
      "Error":  "Requested media type is not supported"
}
```

Status: 415 Unsupported Media Type
```
{
      "Error":  "Sent media type is not supported"
}
```

Delete a Boat

Allows you to delete a boat. Note that if the boat currently contains any loads, deleting the boat unloads all loads associated to the boat. All load carrier properties with associated boat are also updated.

DELETE /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	404 Not Found	No boat with this boat_id exists

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found
```
{
    "Error":  "No boat with this boat_id exists"
}
```

Create a Load (protected)

Allows you to create a new load.

```
POST /loads
```

Request

Path Parameters

None

Authorization

Bearer Token: JSON Web Token

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
Content	String	The contents of the load	Yes
volume	Integer	The volume of the load in cubic feet	Yes

Request Body Example

```
{
    "content": "LEGO blocks",
     "volume": 5
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing any of the required attributes.
Failure	401 Unauthorized	Invalid authorization token
Failure	406 Not Acceptable	Requested media type is not supported.
Failure	415 Unsupported Media Type	The sent media type is not supported.

Response Examples

Success

```
Status: 201 Created
{
    "id": "123abc",
    "owner": "google-123456,
    "volume": 1,
     "content": "LEGO Blocks",
     "creation_date": "4/23/2021",
     "carrier": {},
    "self": "https://boats-loads-api.uw.r.appspot.com/loads/123abc"
}
```

Failure

Status: 400 Bad Request
```
{
    "Error":  "The request object is missing at least one of the required attributes"
}
```
Status: 401 Unauthorized
```
{
    "Error":  "Invalid bearer authorization token"
}
```
Status: 406 Not Acceptable
```
{
    "Error":  "Requested media type is not supported"
}
```
Status: 415 Unsupported Media Type
```
{
    "Error":  "Sent media type is not supported"
}
```

View a Load (protected)

Allows you to view an existing load that you own.

GET /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Authorization

Bearer Token: JSON Web Token

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Invalid authorization token
Failure	403 Forbidden	Not the owner of the load
Failure	404 Not Found	No load with this load_id exists
Failure	406 Not Acceptable	Requested media type is not supported.

Response Examples

Success

Status: 200 OK
```
{
    "id": "123abc",
    "owner": "google-123456",
    "volume": 1,
     "content": "LEGO Blocks",
     "creation_date": "4/23/2021",
     "carrier": {
                "id": "123456",
                 "name": "Odyssey",
                 "self": "https://boats-loads-
api.uw.r.appspot.com/boats/123456"
              },
    "self": "https://boats-loads-api.uw.r.appspot.com/loads/123abc"
}
```

Failure

Status: 401 Unauthorized
```
{
   "Error":  "Invalid bearer authorization token"
}
```

Status: 403 Forbidden
```
{
    "Error":  "You are not the owner of this load"
}
```

Status: 404 Not Found

```
{
    "Error":  "Load with this load_id does not exists"
}
```

Status: 406 Not Acceptable

```
{
   "Error":  "Requested media type is not supported"
}
```

View all Loads (protected)

Allows you to view all the loads that you own. Implements pagination with a limit of 5 loads per page, and link to the "next" page of results.

```
GET /loads
```

Request

Path Parameters

None

Authorization

Bearer Token: JSON Web Token

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Invalid authorization token
Failure	406 Not Acceptable	Requested media type is not supported.

Response Examples

Success

```
Status: 200 OK
load_count: 7,
loads:[
        {
            "id": "123abc",
          "owner": "google-123456",
            "volume": 1,
            "content": "LEGO Blocks",
            "creation_date": "4/23/2021",
            "carrier": {},
            "self": "https://boats-loads-api.uw.r.appspot.com/loads/123abc"
        },
        {
            "id": "456bcd",
          "owner": "google-123456",
            "volume": 5,
            "content": "Bananas",
            "creation_date": "4/20/2021",
            "carrier": {},
            "self": "https://boats-loads-api.uw.r.appspot.com/loads/456bcd "
        },
        {
            "id": "123456",
            "volume": 2,
          "owner": "google-123456",
            "content": "Rocks",
            "creation_date": "4/21/2021",
            "carrier": {},
```

```
            "self": "https://boats-loads-api.uw.r.appspot.com/loads/123456"
        },
        {
            "id": "456bcd",
         "owner": "google-123456",
            "volume": 5,
            "content": "Bananas",
            "creation_date": "4/20/2021",
            "carrier": {},
            "self": "https://boats-loads-api.uw.r.appspot.com/loads/456bcd "
        },
        {
            "id": "123456",
            "volume": 2,
         "owner": "google-123456",
            "content": "Rocks",
            "creation_date": "4/21/2021",
            "carrier": {},
            "self": "https://boats-loads-api.uw.r.appspot.com/loads/123456"
        }
        ],
next: "https://boats-loads-api.uw.r.appspot.com/loads?"cursor=abcdefg"
```

Failure

Status: 401 Unauthorized
```
{
   "Error":  "Invalid bearer authorization token"
}
```

Status: 406 Not Acceptable
```
{
   "Error":  "Requested media type is not supported"
}
```

Update a Load (protected)

Allows you to update parts of a load you own

```
PATCH /loads/:load_id
```

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Authorization

Bearer Token: JSON Web Token

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
content	String	The contents of the load	No
volume	Integer	The volume of the load in cubic feet	No

Request Body Example

```
{
   "content": "Taco Shells",
   "volume": 4
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	401 Unauthorized	Invalid authorization token
Failure	403 Forbidden	Not the owner of the load
Failure	404 Not Found	There is no load matching this load_id
Failure	406 Not Acceptable	Requested media type is not supported.
Failure	415 Unsupported Media Type	The sent media type is not supported.

Response Examples

Success

```
Status: 201 Created
{
   "id": "123abc",
   "owner": "google-123456,
   "volume": 4,
    "content": "Taco Shells",
    "creation_date": "4/23/2021",
    "carrier": {},
   "self": "https://boats-loads-api.uw.r.appspot.com/loads/123abc"
}
```

Failure

Status: 401 Unauthorized
```
{
    "Error":  "Invalid bearer authorization token"
}
```

Status: 403 Forbidden
```
{
    "Error":  "You are not the owner of this load"
}
```

Status: 404 Not Found
```
{
    "Error":  "No load with this load_id exists"
}
```

Status: 406 Not Acceptable
```
{
    "Error":  "Requested media type is not supported"
}
```

Status: 415 Unsupported Media Type
```
{
    "Error":  "Sent media type is not supported"
}
```

Replace a Load (protected)

Allows you to replace a load

PUT /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Authorization

Bearer Token: JSON Web Token

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
content	String	The contents of the load	Yes
volume	Integer	The volume of the load in cubic feet	Yes

Request Body Example

```
{
   "content": "Taco Shells",
   "volume": 4
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing any of the 2 required attributes
Failure	401 Unauthorized	Invalid authorization token
Failure	403 Forbidden	Not the owner of the load
Failure	404 Not Found	There is no boat matching this load_id
Failure	406 Not Acceptable	Requested media type is not supported.
Failure	415 Unsupported Media Type	The sent media type is not supported.

Response Examples

Success

```
Status: 201 Created
{
   "id": "123abc",
   "owner": "google-123456,
   "volume": 4,
    "content": "Taco Shells",
    "creation_date": "4/23/2021",
    "carrier": {},
   "self": "https://boats-loads-api.uw.r.appspot.com/loads/123abc"
```

```
}
```

Failure

Status: 400 Bad Request
```
{
   "Error":  "At least one of the required attributes is missing"
}
```

Status: 401 Unauthorized
```
{
   "Error":  "Invalid bearer authorization token"
}
```

Status: 403 Forbidden
```
{
    "Error":  "You are not the owner of this load"
}
```

Status: 406 Not Acceptable
```
{
   "Error":  "Requested media type is not supported"
}
```

Status: 415 Unsupported Media Type
```
{
   "Error":  "Sent media type is not supported"
}
```

Delete a Load (protected)

Allows you to delete a load that you own. If the load being deleted is assigned to a carrier the load is unloaded from the carrier.

DELETE /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Authorization

Bearer Token: JSON Web Token

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Invalid authorization token
Failure	403 Forbidden	Not the owner of the load
Failure	404 Not Found	No load with this load_id exists

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized

``
{
    "Error": "Invalid bearer authorization token"
}
``

Status: 403 Forbidden

``
{
     "Error": "You are not the owner of this load"
}
``

Status: 404 Not Found

``
{
    "Error": "No load with this load_id exists"
}
``

Loading Loads onto Boats

Allows you to add a load to a boat. Update the carrier information on a load and update the loads information on a boat.

PUT /boats/:boat_id/loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load
boat_id	String	ID of the boat

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a boat exists with this boat_id, a load exists with this load_id, a the load is not yet assigned, and you are the load owner.
Failure	403 Forbidden	Load is already assigned to a boat.
Failure	404 Not Found	No boat with this boat_id exists, and/or no load with this load_id exits.

Response Examples

Success

Status: 204 No Content

Failure

Status: 403 Forbidden

``
{
   "Error": "load is already assigned to a boat"
}
``

Status: 404 Not Found

``
{
   "Error": "Load with this load_id does not exist and/or boat with this boat_id does not exist."
}
``

Unload a Load from a Boat

Allows to unload a load from a boat. The carrier is removed from the load and the load is removed from the boat.

DELETE /boats/:boat_id/loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load
boat_id	String	ID of the boat

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a boat exists with this boat_id, a load exists with this load_id and this load was assigned to this boat.
Failure	403 Forbidden	Load is not assigned to this boat.
Failure	404 Not Found	No boat with this boat_id exists, and/or no load with this load_id exits.

Response Examples

Success

Status: 204 No Content

Failure

Status: 403 Forbidden
{
"Error": "The specified load is not assigned to this boat"
}

Status: 404 Not Found
{
"Error": "The specified boat and/or load does not exist"
}

Not Supported Endpoints

GET /boats/:boat_id/loads/:load_id

GET /boats/:boat_id/loads

PATCH /boats/:boat_id/loads/:load_id

POST /boats/:boat_id/loads

Failure

Status: 405 Method Not Allowed
{
"Error": "Method not supported"
}