

# Final Project: API Spec

CS 493: Cloud Application Development

Spring 2023

Oregon State University

URL: <https://cloud-assignments-final.uw.r.appspot.com/>

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## Change log

Version	Change	Date
1.0	Initial version.	June 12, 2023

## Data Model

The app stores three kinds of entities in Datastore, Users, Devices, and Tests.

### Users

Property	Data Type	Notes
id	String	The id of the user. This is equivalent to the 'sub' property.
name	String	Name of the User.
email	String	The email of the user
devices	List	The list of User Devices

### Devices

Property	Data Type	Notes
id	String	The id of the Device (Generated)
DeviceName	String	Name of the Device. (must be less than 255 chars)
deviceType	String	Must be from the following selection: ["E9"]
deviceBrand	String	Must be from the following selection: ["Dell"]
owner_id	String	The id of the User that owns this device
tests	List	Contains all tests that belong to this device.
self	String	Not Stored - Device URI

### Tests

Property	Data Type	Notes
id	String	The id of the Device (Generated)
ClientIP	String	The Client IP Address (must be less than 255 chars)
UploadValue	Float	The Upload Speed Value
DownloadRetrans Value	Float	The DownloadRetransValue
DownloadRetrans Unit	String	Must be from the following selection: ["%"]
DownloadUUID	String	Must be less than 255 chars
DownloadUnit	String	Must be from the following selection: ["Mbit/s"]
DownloadValue	Float	The Download Value speed
MinRTTUnit	String	Must be from the following selection: ["ms"]
MinRTTValue	Float	Float
MurakamiConnect ionType	String	Must be from the following selection: ["wired", "wireless"]
MurakamiLocation	String	The location of the test
MurakamiNetwork Type	String	Must be from the following selection: ["home", "commercial"]
ServerIP	String	The Server IP address
ServerName	String	The server name

TestEndTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]
TestName	String	Name of the Test. (must be less than 255 chars)
TestStartTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]
UploadUnit	String	Must be from the following selection: ["Mbit/s"]
device_id	Int (Optional)	The device that this test is assigned to.
self	String	Not Stored - Test URI

## Create a Device

Allows you to create a new device.

POST /devices
---------------

### Request

#### Path Parameters

None

#### Request Body

Required

#### Request Body Format

JSON

#### Request JSON Attributes

All Strings must be less than 255 characters.

Property	Data Type	Required?
DeviceName	String	Yes
DeviceType	String	Yes
DeviceBrand	String	Yes

#### Request Body Example

```
{
  "DeviceName": "Test_Device_01",
  "DeviceType": "E9",
  "DeviceBrand": "Dell"
}
```

### 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, the attributes do not meet the above requirements, or it has additional attributes the device must not be created and 400 status code must be returned.
Failure	401 Forbidden	If a user is not authenticated, the device is not created and a 401 status code is returned.
Failure	406 Invalid Accept Header	If the request's Accept header does not include 'application/json', the 406 status code is returned.

#### Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. The app sends back this value in the response body as shown in the example.

### Success

Status: 201 Created

```
{
  "DeviceName": "Test_Device_01",
  "DeviceType": "E9",
  "DeviceBrand": "Dell",
  "owner_id": "auth0|646bfc2e2b851c3fe65fa8ba",
  "tests": [],
  "id": 5361805077512192,
  "self": "https://cloud-assignments-final.uw.r.appspot.com/devices/5361805077512192"
}
```

### Failures

Status: 400 Bad Request

```
{
  "Error": "The request object is missing at least one of the required
attributes or has an additional attribute."
}
```

---

Status: 401 Unauthorized

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
  "Error": "Unauthorized action."
}
```

Status: 406 NOT ACCEPTABLE

```
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Get a Device

Allows you to get an existing device

GET /device/:device_id
------------------------

### Request

#### Path Parameters

Name	Description
device_id	ID of the device

### Request Body

None

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	403 Forbidden	If an authenticated user does not own the requested resource, a 401 status code is returned.
Failure	404 Not Found	No device with this device_id exists
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Response Examples

##### Success

```
Status: 200 OK
{
  "DeviceBrand": "Dell",
  "tests": [],
  "owner_id": "auth0|64874d3d146ddde5386f8692",
  "DeviceName": "Test_Device_01",
  "DeviceType": "E9",
  "id": 5673082664517632,
  "self": "http://localhost:8080/devices/5673082664517632"
}
```

##### Failure

```
Status: 404 Not Found

{
  "Error": "No device with this device_id exists"
}

Status: 401 Forbidden
```

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}

Status: 403 Forbidden
{
  "Error": "Unauthorized action."
}

Status: 406 Not Acceptable
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Edit a Device (PATCH)

Allows you to edit a device. At least one attribute must be provided.

PATCH /devices/:device\_id

### Request

#### Path Parameters

Name	Description
device_id	ID of the device

### Request Body

Required

### Request Body Format

JSON

#### Request JSON Attributes

Name	Data Type	Required?
DeviceName	String	No
DeviceType	String	No
DeviceBrand	String	No

### Request Body Example

```
{
  "DeviceName": "Updated_Test_Device_01",
  "DeviceType": "E9",
  "DeviceBrand": "Dell"
}
```

### Response

#### Response Body Format

JSON (Failure)

#### Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	If the request does not have a valid attribute or contains invalid attributes (such as ID), the device is not updated, and 400 status code must be returned.
Failure	404 Not Found	No device with this device_id exists
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	403 Forbidden	If an authenticated user does not own the requested resource, a 401 status code is returned.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Failure

Status: 400 Bad Request



```
{
  "Error": "The request object is missing at least one of the required
attributes or has an additional attribute."
}
```

Status: 404 Not Found

```
{
"Error": "No device with this device_id exists"
}
```

---

Status: 401 Forbidden

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
  "Error": "Unauthorized action."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Edit a Device (PUT)

Allows you to edit a Device. All attributes must be provided.

PUT /devices/:device\_id

### Request

#### Path Parameters

Name	Description
device_id	ID of the device

### Request Body

Required

### Request Body Format

JSON (Failure)

#### Request JSON Attributes

Name	Data Type	Required?
DeviceName	String	Yes
DeviceType	String	Yes
DeviceBrand	String	Yes

### Request Body Example

```
{
  "DeviceName": "Updated_Test_Device_01",
  "DeviceType": "E9",
  "DeviceBrand": "Dell"
}
```

### Response

#### Response Body Format

None (JSON on Failure)

#### Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	If the request does not have a valid attribute or contains invalid attributes (such as ID), the device is not updated, and 400 status code must be returned.
Failure	404 Not Found	No device with this device_id exists
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	403 Forbidden	If an authenticated user does not own the requested resource, a 401 status code is returned.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Failure

Status: 400 Bad Request

```
{
  "Error": "The request object is missing at least one of the required
attributes or has an additional attribute."
}
```

Status: 404 Not Found

```
{
"Error": "No device with this device_id exists"
}
```

---

Status: 401 Forbidden

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
  "Error": "Unauthorized action."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Delete a Device

Allows you to delete a Device.

DELETE /devices/:device_id
----------------------------

### Request

#### Path Parameters

Name	Description
device_id	ID of the device

### 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 device with this device_id exists
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	403 Forbidden	If an authenticated user does not own the requested resource, a 401 status code is returned.

#### Response Examples

##### Success

Status: 204 No Content
------------------------

##### Failure

<pre>Status: 404 Not Found {   "Error": "No device with this device_id exists" }  Status: 401 Forbidden {   "code": "no auth header",   "description": "Authorization header is missing" }  Status: 403 Forbidden {   "Error": "Unauthorized action." }</pre>
---

## Get All Devices

Allows you to get all devices

GET /devices
--------------

### Request

#### Path Parameters

None

#### Request Body

None

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	405 Method Not Allowed	Invalid Method is sent to the endpoint.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Response Examples

##### Success

```
Status: 200 OK
{
  "entities": [
    {
      "tests": [],
      "DeviceType": "E9",
      "DeviceBrand": "Dell",
      "DeviceName": "Test_Device_01",
      "owner_id": "auth0|64874d3d146ddde5386f8692",
      "id": "5673082664517632",
      "self": "http://localhost:8080/devices/5673082664517632"
    }
  ],
  "count": 1,
  "next": null
}
```

##### Failure

```
Status: 401 Forbidden
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

```
}
```

```
Status: 405 Method Not Allowed
```

```
Status: 406 Not Acceptable
```

```
{
```

```
    "Error": "Not Acceptable - Invalid Accept Header"
```

```
}
```

## Get All Users

Allows you to get all Users

GET /users
------------

### Request

#### Path Parameters

None

#### Request Body

None

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	405 Method Not Allowed	Invalid Method is sent to the endpoint.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Response Examples

##### Success

```
Status: 200 OK
{
  "user_ids": [
    "auth0|646bfc2e2b851c3fe65fa8ba",
    "auth0|64874d3d146ddde5386f8692"
  ]
}
```

##### Failure

```
Status: 405 Method Not Allowed

Status: 406 Not Acceptable
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Get A User

Allows you to view a user's JWT

GET /users/:user_id
---------------------

### Request

#### Path Parameters

None

#### Request Body

None

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	

#### Response Examples

##### Success

Status: 200 OK User's JWT Unique ID = sub
---

##### Failure

Status: 405 Method Not Allowed
Status: 406 Not Acceptable { "Error": "Not Acceptable - Invalid Accept Header" }



## Create a Test

Allows you to create a new test.

POST /tests

### Request

#### Path Parameters

None

#### Request Body

Required

#### Request Body Format

JSON

#### Request JSON Attributes

All Strings must be less than 255 characters.

Property	Data Type	Description	Required?
ClientIP	String	The Client IP Address (must be less than 255 chars)	Yes
UploadValue	Float	The Upload Speed Value	Yes
DownloadRetransValue	Float	The DownloadRetransValue	Yes
DownloadRetransUnit	String	Must be from the following selection: ["%"]	Yes
DownloadUUID	String	Must be less than 255 chars	Yes
DownloadUnit	String	Must be from the following selection: ["Mbit/s"]	Yes
DownloadValue	Float	The Download Value speed	Yes
MinRTTUnit	String	Must be from the following selection: ["ms"]	Yes
MinRTTValue	Float	Float	Yes
MurakamiConnectionType	String	Must be from the following selection: ["wired", "wireless"]	Yes
MurakamiLocation	String	The location of the test	Yes
MurakamiNetworkType	String	Must be from the following selection: ["home", "commercial"]	Yes
ServerIP	String	The Server IP address	Yes
ServerName	String	The server name	Yes
TestEndTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]	Yes
TestName	String	Name of the Test. (must be less than 255 chars)	Yes
TestStartTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]	Yes
UploadUnit	String	Must be from the following selection: ["Mbit/s"]	Yes
device_id	Int	The device that this test is assigned to.	No

#### Request Body Example

```
{
```

```

    "TestName": "ndt5",
    "TestStartTime": "2022-11-22T02:08:25.543610",
    "TestEndTime": "2022-11-22T02:08:46.339942",
    "MurakamiLocation": "dellemc2",
    "MurakamiConnectionType": "wired",
    "MurakamiNetworkType": "home",
    "ServerName": "ndt-iupui-mlab1-sea07.mlab-oti.measurement-lab.org",
    "ServerIP": "2001:2030:0:a::139",
    "ClientIP": "6f26:8b25:5195:67d5:ad2c:61f0:1b41:c46b",
    "DownloadUUID": "ndt-l4w6d_1667169943_unsafe_0000000000FCF56",
    "DownloadValue": 674.0850946394074,
    "DownloadUnit": "Mbit/s",
    "UploadValue": 36.527,
    "UploadUnit": "Mbit/s",
    "DownloadRetransValue": 0.0,
    "DownloadRetransUnit": "%",
    "MinRTTValue": 24.327,
    "MinRTTUnit": "ms",
    "device_id": 5673082664517632
  }

```

## 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, the attributes do not meet the above requirements, or it has additional attributes the device must not be created and 400 status code must be returned.
Failure	401 Forbidden	If a user is not authenticated, the device is not created and a 401 status code is returned.
Failure	406 Invalid Accept Header	If the request's Accept header does not include 'application/json', the 406 status code is returned.
Failure	404 Not Found	No device/test with this device_id/test_id exists

### Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. The app sends back this value in the response body as shown in the example.

#### Success

```

Status: 201 Created

{
  "TestName": "ndt5",
  "TestStartTime": "2022-11-22T02:08:25.543610",

```

```
"TestEndTime": "2022-11-22T02:08:46.339942",
"MurakamiLocation": "dellemc2",
"MurakamiConnectionType": "wired",
"MurakamiNetworkType": "home",
"ServerName": "ndt-iupui-mlab1-sea07.mlab-oti.measurement-lab.org",
"ServerIP": "2001:2030:0:a::139",
"ClientIP": "6f26:8b25:5195:67d5:ad2c:61f0:1b41:c46b",
"DownloadUUID": "ndt-l4w6d_1667169943_unsafe_0000000000FCF56",
"DownloadValue": 674.0850946394074,
"DownloadUnit": "Mbit/s",
"UploadValue": 36.527,
"UploadUnit": "Mbit/s",
"DownloadRetransValue": 0.0,
"DownloadRetransUnit": "%",
"MinRTTValue": 24.327,
"MinRTTUnit": "ms",
"device_id": 5673082664517632,
"id": 5633378543992832,
"self": "http://localhost:8080/tests/5633378543992832"
}
```

#### Failures

Status: 400 Bad Request

```
{
  "Error": "The request object is missing at least one of the required
attributes or has an additional attribute."
}
```

Status: 404 Not Found

```
{
  "Error": "No device with this device_id exists."
}
```

OR

```
{
  "Error": "No test with this test_id exists."
}
```

---

Status: 401 Unauthorized

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
  "Error": "Unauthorized action."
}
```

Status: 406 NOT ACCEPTABLE

```
{  
  "Error": "Not Acceptable - Invalid Accept Header"  
}
```

## Get a Test

Allows you to get an existing test

GET /test/:test_id
--------------------

### Request

#### Path Parameters

Name	Description
test_id	ID of the test

### Request Body

None

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	404 Not Found	No test with this test_id exists
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Response Examples

##### Success

Status: 200 OK
{ "TestName": "ndt5", "TestStartTime": "2022-11-22T02:08:25.543610", "TestEndTime": "2022-11-22T02:08:46.339942", "MurakamiLocation": "dellemc2", "MurakamiConnectionType": "wired", "MurakamiNetworkType": "home", "ServerName": "ndt-iupui-mlab1-sea07.mlab-oti.measurement-lab.org", "ServerIP": "2001:2030:0:a::139", "ClientIP": "6f26:8b25:5195:67d5:ad2c:61f0:1b41:c46b", "DownloadUUID": "ndt-l4w6d_1667169943_unsafe_00000000000FCF56", "DownloadValue": 674.0850946394074, "DownloadUnit": "Mbit/s", "UploadValue": 36.527, "UploadUnit": "Mbit/s", "DownloadRetransValue": 0.0, "DownloadRetransUnit": "%", "MinRTTValue": 24.327, "MinRTTUnit": "ms",

```
{
  "device_id": 5673082664517632,
  "id": 5633378543992832,
  "self": "http://localhost:8080/tests/5633378543992832"
}
```

#### *Failure*

Status: 404 Not Found

```
{
  "Error": "No test with this test_id exists"
}
```

---

Status: 401 Forbidden

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Edit a Test (PATCH)

Allows you to edit a test. At least one attribute must be provided.

PATCH /tests/:test\_id

### Request

#### Path Parameters

Name	Description
test_id	ID of the test

### Request Body

Required

### Request Body Format

JSON

#### Request JSON Attributes

Property	Data Type	Description	Required?
ClientIP	String	The Client IP Address (must be less than 255 chars)	No
UploadValue	Float	The Upload Speed Value	No
DownloadRetransValue	Float	The DownloadRetransValue	No
DownloadRetransUnit	String	Must be from the following selection: ["%"]	No
DownloadUUID	String	Must be less than 255 chars	No
DownloadUnit	String	Must be from the following selection: ["Mbit/s"]	No
DownloadValue	Float	The Download Value speed	No
MinRTTUnit	String	Must be from the following selection: ["ms"]	No
MinRTTValue	Float	Float	No
MurakamiConnectionType	String	Must be from the following selection: ["wired", "wireless"]	No
MurakamiLocation	String	The location of the test	No
MurakamiNetworkType	String	Must be from the following selection: ["home", "commercial"]	No
ServerIP	String	The Server IP address	No

ServerName	String	The server name	No
TestEndTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]	No
TestName	String	Name of the Test. (must be less than 255 chars)	No
TestStartTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]	No
UploadUnit	String	Must be from the following selection: ["Mbit/s"]	No
device_id	Int	The device that this test is assigned to.	No

#### Request Body Example

```
{
  "TestName": "ndt5",
  "TestStartTime": "2022-11-22T02:08:25.543610",
  "TestEndTime": "2022-11-22T02:08:46.339942",
}
```

#### Response

##### Response Body Format

JSON (Failure)

##### Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	If the request does not have a valid attribute or contains invalid attributes (such as ID), the test is not updated, and 400 status code must be returned.
Failure	404 Not Found	No test/device with this test_id/device_id exists
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### Failure

```
Status: 400 Bad Request

{
  "Error": "The request object is missing at least one of the required attributes or has an additional attribute."
}

Status: 404 Not Found

{
  "Error": "No device with this device_id exists"
}
```



---

Status: 401 Forbidden

```
{  
  "code": "no auth header",  
  "description": "Authorization header is missing"  
}
```

Status: 406 Not Acceptable

```
{  
  "Error": "Not Acceptable - Invalid Accept Header"  
}
```

## Edit a Test(PUT)

Allows you to edit a test. All attributes must be provided.

PUT /tests/:test\_id

### Request

#### Path Parameters

Name	Description
test_id	ID of the test

### Request Body

Required

### Request Body Format

JSON (Failure)

### Request JSON Attributes

Property	Data Type	Description	Required?
ClientIP	String	The Client IP Address (must be less than 255 chars)	Yes
UploadValue	Float	The Upload Speed Value	Yes
DownloadRetransValue	Float	The DownloadRetransValue	Yes
DownloadRetransUnit	String	Must be from the following selection: ["%"]	Yes
DownloadUUID	String	Must be less than 255 chars	Yes
DownloadUnit	String	Must be from the following selection: ["Mbit/s"]	Yes
DownloadValue	Float	The Download Value speed	Yes
MinRTTUnit	String	Must be from the following selection: ["ms"]	Yes
MinRTTValue	Float	Float	Yes
MurakamiConnectionType	String	Must be from the following selection: ["wired", "wireless"]	Yes
MurakamiLocation	String	The location of the test	Yes
MurakamiNetworkType	String	Must be from the following selection: ["home", "commercial"]	Yes

ServerIP	String	The Server IP address	Yes
ServerName	String	The server name	Yes
TestEndTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]	Yes
TestName	String	Name of the Test. (must be less than 255 chars)	Yes
TestStartTime	String	Must be in ISO format ["%Y-%m-%dT%H:%M:%S.%f"]	Yes
UploadUnit	String	Must be from the following selection: ["Mbit/s"]	Yes
device_id	Int	The device that this test is assigned to.	Yes

### Request Body Example

```
{
  "TestName": "ndt5",
  "TestStartTime": "2022-11-22T02:08:25.543610",
  "TestEndTime": "2022-11-22T02:08:46.339942",
  "MurakamiLocation": "dellemc2",
  "MurakamiConnectionType": "wired",
  "MurakamiNetworkType": "home",
  "ServerName": "ndt-iupui-mlab1-sea07.mlab-oti.measurement-lab.org",
  "ServerIP": "2001:2030:0:a::139",
  "ClientIP": "6f26:8b25:5195:67d5:ad2c:61f0:1b41:c46b",
  "DownloadUUID": "ndt-l4w6d_1667169943_unsafe_00000000000FCF56",
  "DownloadValue": 674.0850946394074,
  "DownloadUnit": "Mbit/s",
  "UploadValue": 36.527,
  "UploadUnit": "Mbit/s",
  "DownloadRetransValue": 0.0,
  "DownloadRetransUnit": "%",
  "MinRTTValue": 24.327,
  "MinRTTUnit": "ms",
  "device_id": 5673082664517632,
  "id": 5633378543992832
}
```

### Response

#### Response Body Format

None (JSON on Failure)

#### Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	If the request does not have a valid attribute or contains invalid attributes (such as ID), the device is not updated, and 400 status code must be returned.
Failure	404 Not Found	No device with this device_id exists

Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

#### *Failure*

Status: 400 Bad Request

```
{
  "Error": "The request object is missing at least one of the required
attributes or has an additional attribute."
}
```

Status: 404 Not Found

```
{
  "Error": "No device with this device_id exists"
}
```

---

Status: 401 Forbidden

```
{
  "code": "no auth header",
  "description": "Authorization header is missing"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Not Acceptable - Invalid Accept Header"
}
```

## Delete a Test

Allows you to delete a test.

DELETE /tests/:test_id
------------------------

### Request

#### Path Parameters

Name	Description
test_id	ID of the test

### 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 test with this test_id exists
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.

#### Response Examples

##### Success

Status: 204 No Content
------------------------

##### Failure

<pre>Status: 404 Not Found {   "Error": "No device with this device_id exists" }  Status: 401 Forbidden {   "code": "no auth header",   "description": "Authorization header is missing" }</pre>
--

## Get All Tests

Allows you to get all tests

GET /tests
------------

## Request

### Path Parameters

None

### Request Body

None

## Response

### Response Body Format

JSON

### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Forbidden	If a user is not authenticated a 401 status code is returned.
Failure	405 Method Not Allowed	Invalid Method is sent to the endpoint.
Failure	406 Not Acceptable	Invalid MIME type was provided in request header

### Response Examples

#### Success

```
Status: 200 OK
{
  "entities": [
    {
      "TestEndTime": "2022-11-22T02:08:46.339942",
      "DownloadRetransValue": 0.0,
      "UploadUnit": "Mbit/s",
      "MinRTTValue": 24.327,
      "DownloadUnit": "Mbit/s",
      "MurakamiNetworkType": "home",
      "DownloadValue": 674.0850946394074,
      "UploadValue": 36.527,
      "MurakamiConnectionType": "wired",
      "device_id": 5673082664517632,
      "MurakamiLocation": "dellemc2",
      "MinRTTUnit": "ms",
      "ServerName": "ndt-iupui-mlab1-sea07.mlab-oti.measurement-lab.org",
      "TestStartTime": "2022-11-22T02:08:25.543610",
      "ServerIP": "2001:2030:0:a::139",
      "DownloadRetransUnit": "%",
      "TestName": "ndt5",
      "DownloadUUID": "ndt-l4w6d_1667169943_unsafe_00000000000FCF56",
      "ClientIP": "6f26:8b25:5195:67d5:ad2c:61f0:1b41:c46b",
      "id": 4789736740749312,
      "self": "https://cloud-assignments-final.uw.r.appspot.com/tests/4789736740749312"
```

```
    }},  
    ...  
    "count": 6,  
    "next": "https://cloud-assignments-final.uw.r.appspot.com/tests?limit=5&offset=5"  
  }  
}
```

#### *Failure*

```
Status: 401 Forbidden  
{  
  "code": "no auth header",  
  "description": "Authorization header is missing"  
}  
  
Status: 405 Method Not Allowed  
  
Status: 406 Not Acceptable  
{  
  "Error": "Not Acceptable - Invalid Accept Header"  
}
```