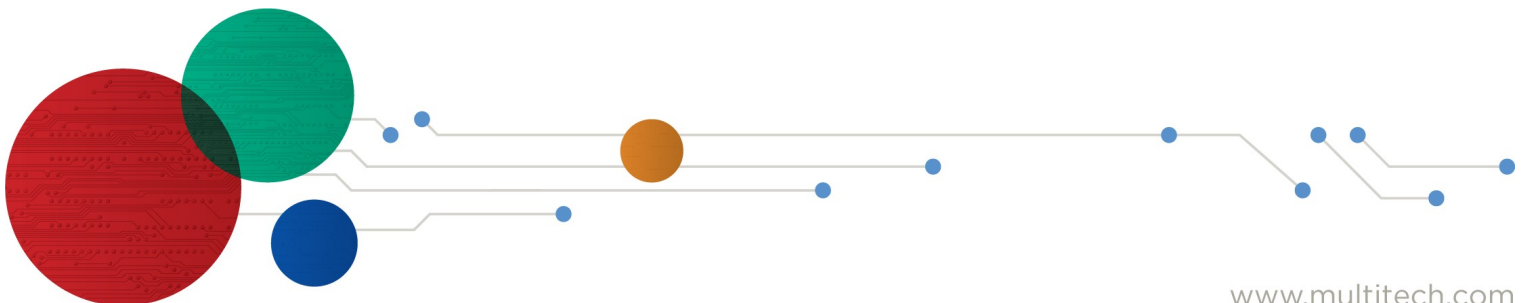




**LENS<sup>®</sup>**

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API Guide



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## LENS User Guide

Part Number: S000757, Version 1.5

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# LENS API v1.0

---

## Site

Site is the domain or base part of URL.

Example site:

<https://lens-dev.devicehq.com/>

## Versioning

Get the version of LENS API.

### GET `api/v2/status`

Data is a required parameter and should be defined, even if it is empty. This is the only API that does not require the `x-auth-token` to be defined in the header.

```
method: 'get',
url: site + 'api/v2/status',
data: {},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
}
```

### Response Code: 200

#### *Response Payload example*

```
{
  "meta": {
    "versions": {
      "frontend": "v1.2.0-gf8b694e",
      "api": "v1.2.10-g22a8ac4",
      "cloud": "207f027f31f8137b",
      "join_server": "v1.0.0-27-ge7b456e"
    },
    "environment": "aws-dev",
    "deployed_at": "2019-10-18T18:18:35Z",
    "status": "OK"
  }
}
```

---

```
}
```

## Error: "Network Error"

Cross-Origin Request Blocked: The Same Origin Policy disallows reading the remote resource at https://lens-test.devicehq.com/api/v2/status. (Reason: CORS request did not succeed). The LENS site must be enabled for CORS for the API call.

## Sessions

Log in to LENS. Create a session with user name and password (optionally mfa\_code for 2 Factor Authentication) to retrieve an x-auth-token, which in turn is a header requirement for subsequent LENS API calls.

## Attributes

### expires\_at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** TBD

### auth\_token

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** None

**Description:** TBD

### user\_id

**Type:** String

**Format:** UUID

**Permissions:** System-ReadOnly

**Restrictions:** Unique to System

**Description:** Reference to user URI

---

## organization\_id

**Type:** String

**Format:** UUID

**Permissions:** System-ReadOnly

**Restrictions:** Unique to System / Organization

**Description:** Reference to organization URI

## password\_expiration

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** None

**Description:** TBD

## POST api/v2/sessions

```
method: 'post',
url: site + 'api/v2/sessions',
data: {
  meta: {
    email: username, * Required *
    password: password, * Required *
    mfa_code: null
  }
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
}
```

---

## Response Code: 200

Use the `auth_token` response for subsequent LENS API headers.

### **Response payload example**

```
{
  "meta": {
    "expires_at": "2019-10-22T20:58:14.755Z",
    "auth_token": "rBp1y6t-5goSA2vFtpHQ",
    "user_id": "c024ca26-91a4-492b-9f10-447a4263cbad",
    "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
    "password_expiration": "2019-12-11T18:57:29.823Z"
  }
}
```

## Response Code: 202

Resend with Multi-Factor code included as `mfa_code` parameter.

## Response Code: 400

- User password invalid.
- User not found.

## DELETE `api/v2/sessions`

Logout and end user session from LENS. `Data` is a required parameter and should be defined, even if it is empty. Use the `auth_token` from the login session

```
method: 'delete',
url: site + 'api/v2/sessions',
data: {
  data: {}
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

---

## Response Code: 200

### *Response payload example:*

```
{
  "meta": {
    "message": "Session closed at 2019-10-22 15:12:46 -0500"
  }
}
```

---

# Application Networks

Since LENS provides a central Join Server for all provisioned End-Devices, Application Networks are used to map which End-Devices are allowed to join through which Gateways. Application Networks are necessary (even though optional) parameters for End-Devices and Gateways in order to create a successful Join Request. Application Networks are not required parameters for provisioning, so these parameters need to be updated at a later time, if not provided at the time of provisioning.

Application Networks also provide URL, Container Names and IDs, which can be used for applications running in the cloud. The Conduit LoRa Network Server attaches the Application Network identifier to the Uplink Packets sent to the LoRa Application Server so that the custom application may use this identifier to query for the URL, Container Names and IDs.

## Relationships

### Relationship to End-Devices

An Application Network has many End-Devices. Both must belong to same Organization.

### Relationship to Gateways

An Application Network has many Gateways. Both must belong to same Organization.

## Network Attributes

### name

**Type:** String

Format: None

**Permissions:** Required Updateable

**Restrictions:** Unique to System

**Description:** Application network name. Up to 60 characters.

### description

**Type:** String

Format: None

**Permissions:** Optional Updateable

Restrictions: None

**Description:** Brief description of this network.

---

## url

**Type:** String

Format: URL

**Permissions:** Optional Updateable

Restrictions: None

**Description:** If applicable, enter the application network's URL.

## created\_at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

## updated\_at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

## eui

**Type:** String

Format: EUI

**Permissions:** Required / Optional [*NOTE: Generated if not provided*] WriteOnce

**Restrictions:** Unique to System

**Description:** AppEUI, a unique 64-bit EUI (8 hex digits), or leave blank to have an AppEUI automatically assigned.

**Note:** The value will be sent to the Conduit in a join response to use in received uplink packets as the application identifier. For example, an AppEUI such as 16-ea-76-f6-ab-66-3d-80 can be created randomly, or use the mDot AT interface to generate one.

## organization\_id

**Type:** String

Format: UUID

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Reference to organization URI

---

## network\_profile\_id

**Type:** String

**Format:** UUID

**Permissions:** Optional Updateable

**Restrictions:** Exists in System

**Description:** Reference to network profile URI



---

## **container\_id**

**Type:** String

**Format:** None

**Permissions:** Optional Updateable

**Restrictions:** None

**Description:** Docker container ID

## **container\_name**

**Type:** String

**Format:** None

**Permissions:** Optional Updateable

**Restrictions:** None

**Description:** Docker container name

## **organization\_name**

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Organization name provided when list extends beyond one organization (System Admin usage)

## **status**

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** One of Health Check status types: unconfigured, configured, initiated, active, warning

**Description:** See description above

---

## GET api/v2/application\_networks

Collections can be paginated with **skip** and **limit** parameters. Defaults: skip: 0, limit: 25

```
method: 'get',
url: site + 'api/v2/application_networks',
params: {
  skip: skip,
  limit: limit,
  sort: 'eui'
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

### Response Code: 200

Data provides an array of Application Network Json objects. The meta pagination collection\_count indicates the total number of Application Networks available for this request; while the count indicates how many are returned in this pagination. For additional Application Network Json objects, increase the skip in the GET request.

**Example payload response with an array of 1 data element:**

```
{
  "data": [
    {
      "id": "bcbb30a9-3f37-413c-a2c8-e0589ccdb200",
      "type": "application_networks",
      "attributes": {
        "id": "bcbb30a9-3f37-413c-a2c8-e0589ccdb200",
        "name": "Reliable AppNet",
        "description": "reliable app net description",
        "url": "http://www.reliable.com",
        "created_at": "2019-10-14T19:53:02.694Z",
        "updated_at": "2019-10-14T19:53:02.694Z",
        "eui": "2b-b9-d4-e5-9d-e6-9a-b8",
        "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
        "network_profile_id": null,
        "container_id": "reliable container id",
        "container_name": "reliable container name",
        "organization_name": null,
        "status": "configured"
      }
    },
  ],
}
```

```

    "meta": {
      "gateways_count": 2,
      "end_devices_count": 100
    }
  ],
  "meta": {
    "pagination": {
      "skip": 0,
      "limit": 100,
      "count": 1,
      "collection_count": 1
    }
  }
}

```

## POST api/v2/application\_networks

Create an Application Network. Name and EUI must be unique to the site.

```

method: 'post',
url: site + 'api/v2/application_networks',
data: {
  data: {
    type: 'application_networks',
  attributes: {
    eui: item.attributes.eui,
    name: item.attributes.name,
    container_id: item.attributes.container_id,
    container_name: item.attributes.container_name,
    url: item.attributes.url
  }
}
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}

```

*\* Generated if not provided \**

*\* Required \**

---

**Example Parameters:**

```
{
  "data": {
    "attributes": {
      "container_id": "reliable container id",
      "container_name": "reliable container name",
      "eui": "2b-b9-d4-e5-9d-e6-9a-b8",
      "name": "Reliable AppNet",
      "url": "http://www.reliable.com"
    },
    "type": "application_networks"
  }
}
```

## Response Code: 200

**Example payload response:**

```
{
  "data": {
    "id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
    "type": "application_networks",
    "attributes": {
      "id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
      "name": "New Reliable AppNet",
      "description": null,
      "url": null,
      "created_at": "2019-10-22T21:59:30.202Z",
      "updated_at": "2019-10-22T21:59:30.202Z",
      "eui": "2b-b9-d4-e5-9d-e6-9a-b9",
      "organization_id": "408aaa46-b10f-4943-8070-3527a604843a",
      "network_profile_id": null,
      "container_id": null,
      "container_name": null,
      "organization_name": null
    },
    "relationships": {
      "organization": {
        "data": {
          "id": "408aaa46-b10f-4943-8070-3527a604843a",
          "type": "organizations"
        }
      }
    }
  },
}
```

---

```
    "gateways": {
      "data": []
    },
    "end_devices": {
      "data": []
    }
  },
  "meta": {
    "gateways_count": 0,
    "end_devices_count": 0
  }
}
```

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

---

## PATCH api/v2/application\_networks/:id

Update a given application network with updated attributes.

### **Example of updating the description attribute:**

```
method: 'patch',
url: site + 'api/v2/application_networks/' + item.id,
data: {
  data: {
    type: 'application_networks',
    attributes: {
      description: 'update description'
    }
  }
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

## Response Code: 200

### **Example Response body:**

```
{
  "data": {
    "id": "0bbbc70a-88b9-4f4a-8a62-807fbf63ffcc",
    "type": "application_networks",
    "attributes": {
      "id": "0bbbc70a-88b9-4f4a-8a62-807fbf63ffcc",
      "name": "Reliable AppNet",
      "description": "update description",
      "url": "http://www.reliable.com",
      "created_at": "2019-10-18T15:58:49.521Z",
      "updated_at": "2019-10-22T21:52:40.572Z",
      "eui": "2b-b9-d4-e5-9d-e6-9a-b8",
      "organization_id": "408aaa46-b10f-4943-8070-3527a604843a",
      "network_profile_id": null,
      "container_id": "reliable container id",
      "container_name": "reliable container name",
      "organization_name": null
    }
  },
  "relationships": {
```

```
    "organization": {
      "data": {
        "id": "408aaa46-b10f-4943-8070-3527a604843a",
        "type": "organizations"
      }
    },
    "gateways": {
      "data": [
        {
          "id": "27d0b89d-23b5-4179-985d-18c0af9c2865",
          "type": "gateways"
        }
      ]
    },
    "end_devices": {
      "data": [
        {
          "id": "1329f9e0-35b7-40c2-9f0a-9b55aab95cc8",
          "type": "end_devices"
        },
        {
          "id": "f8ae581e-443f-4181-abfd-4898304a1964",
          "type": "end_devices"
        },
        {
          "id": "e5004c5c-3e4a-46f5-ab31-d8c2b34f141b",
          "type": "end_devices"
        }
      ]
    }
  },
  "meta": {
    "gateways_count": 1,
    "end_devices_count": 3
  }
}
```

---

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## DELETE api/v2/application\_networks/:id

Delete Application Network for a given ID.

```
method: 'delete',
url: site + 'api/v2/application_networks/' + item.id,
headers: {
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

## Response Code: 200

TBD



---

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

---

# Application Network States

The application network state indicates whether end devices have joined through the application network or not. If end devices have joined through the application network, then the application network state is derived from the end-device states.

**Unconfigured** –The application network is provisioned, but no end devices belong to this application network, nor is the application network assigned to any gateway

**Configured** –The application network has been assigned to at least one provisioned end device and belongs to at least one gateway, but no end devices have successfully joined through this application network

**Initiated** –The application network had one or more end devices that joined through this application network that were set to initiated during the Health Check update

**Active** –The application network had at least one active end device that joined through this application network during the Health Check update (there may be initiated end devices as well, but at least one active)

**Warning** –The application network has at least one inactive end device

## Relationships

### Relationship to Application Networks

An Application Network State belongs to one and only one Application Network. Both must belong to same Organization.

## Attributes

### eui

**Type:** String

**Format:** EUI

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Hex octal pairs separated by hyphens

“eui”: “c7-82-51-37-9d-e0-16-05”,

---

## organization-id

**Type:** String

**Format:** UUID

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Reference to organization URI

"organization-id": "37e5a083-fb52-4e29-8590-5e2dc8228090",

## status

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** One of Health Check status types: unconfigured, configured, initiated, active, warning

**Description:** See description above

"status": "configured",

## is-flagged

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Reserved for future use

"is-flagged": false,

## flagged-annotation

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Reserved for future use

"flagged-annotation": "Creation ",

---

## description

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** TBD

`"description": "Creation",`

## created-at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** None

**Description:** When status was created

`"created-at": "2020-07-09T13:15:09.183Z",`

## updated-at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** None

**Description:** When status was last updated

`"updated-at": "2020-10-01T00:30:16.381Z",`

## device-uplink-frequency-threshold

**Type:** Numeric

**Format:** Integer

**Permissions:** Requ

---

ired Updatable

Restrictions:

**Description:** Defaults to 8 hours and can be updated by Organization Admin only. The frequency (in hours) that the end devices for this application network are expected to send uplinks. This will determine if the end device is active or inactive during the Health Check update.

```
"device-uplink-frequency-threshold": 8,
```

## app-name

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: None

**Description:** Name of Application Network

```
"app-name": "ReliableAppNet"
```

## GET api/v2/application\_network\_states

Collections can be paginated with skip and limit parameters. Defaults: skip: 0, limit: 25

```
method: 'get',
url: site + 'api/v2/application_network_states',
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

## Response Code: 200

Response contains both a data and meta section. The meta contains a summary of states and when the state scheduling. The schedule "next" indicates when the next summary will be updated. Example response body of meta and 1 application network state element in data array:

```
{
  "meta": {
    "summary": {
      "configured": 1
    },
    "schedule": {
      "starting": "2020-12-01T12:20:38.622-06:00",
      "ending": "2020-12-01T12:20:39.503-06:00",
      "in-progress": false,
      "next": "2020-12-01T16:20:38.622-06:00"
    }
  }
}
```

---

```
    }
  }
}

{
  "data": [
    {
      "id": "14376142259833804293",
      "type": "application-network-states",
      "attributes": {
        "eui": "c7-82-51-37-9d-e0-16-05",
        "organization-id": "37e5a083-fb52-4e29-8590-5e2dc8228090",
        "status": "configured",
        "is-flagged": false,
        "flagged-annotation": "Creation ",
        "description": "Creation",
        "created-at": "2020-07-09T13:15:09.183Z",
        "updated-at": "2020-10-01T00:30:16.381Z",
        "device-uplink-frequency-threshold": 8,
        "app-name": "ReliableAppNet"
      }
    }
  ]
}
```

---

# End-Devices

## Relationships

### Relationship to Application Networks

An End-Device belongs to one and only one Application Network. Both must belong to same Organization.

### Attributes

#### **app\_key**

**Type:** String

**Format:** 32 Hex characters with optional decimal separation for readability

**E.g.:** aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa

**Permissions:** Required NonReadable Updateable

**Restrictions:** 32 hex characters

Description: TBD

#### **conduit\_serial**

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: None

Description: TBD

#### **organization\_id**

**Type:** String

Format: UUID

**Permissions:** System-ReadOnly

**Restrictions:** Exists in System

**Description:** Reference to organization URI

---

## eui

**Type:** String

Format:EUI

**Permissions:** Required WriteOnce

**Restrictions:** Unique to System

**Description:** End device's extended unique identifier. This is a hexadecimal string, 16 characters long. Valid characters are 0-9, A-F, a-f. Case does not matter.

## name

**Type:** String

Format: None

**Permissions:** Optional Updateable

Restrictions: None

**Description:** Assigned name

## serial\_number

**Type:** String

Format: None

**Permissions:** Required WriteOnce

Restrictions: None

**Description:** End device's serial number.

## product\_id

**Type:** String

Format: None

**Permissions:** Optional Updateable

Restrictions: None

**Description:** User defined product ID

## hardware\_version

**Type:** String

Format: None

**Permissions:** Optional Updateable

Restrictions: None

**Description:** End device's hardware version number.



---

## **firmware\_version**

**Type:** String

**Format:** None

**Permissions:** Optional Updateable

**Restrictions:** None

**Description:** Version number of firmware installed on the end device.

## **rejoin\_count**

**Type:** Numeric

**Format:** Cardinal

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Number of times the end device has rejoined the network.

## **created\_at**

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** None

**Description:** TBD

## **updated\_at**

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** None

**Description:** TBD

## **application\_network\_id**

**Type:** String

**Format:** UUID

**Permissions:** Optional Updateable

**Restrictions:** Exists in System

**Description:** Reference to application network URI

---

## uplink\_counter

**Type:** Numeric

**Format:** Cardinal

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Last reported 32-bit uplink counter value. Appears on the End Device list only.

## downlink\_counter

**Type:** Numeric

**Format:** Cardinal

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Last reported 32-bit downlink counter value. Appears on the End Device list only.

## last\_seen

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Time that a gateway last received an uplink packet from this end device. Appears on the End Device list only.

## device\_profile\_id

**Type:** String

Format: UUID

**Permissions:** Optional Updateable

**Restrictions:** Exists in System

**Description:** Reference to device profile URI

## network\_profile\_id

**Type:** String

Format: UUID

**Permissions:** Optional Updateable

**Restrictions:** Exists in System

**Description:** Reference to network profile URI

---

## organization\_name

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Organization name provided when list extends beyond one organization (System Admin usage)

## status

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** One of Health Check status types: unconfigured, configured, initiated, active, warning

**Description:** See description above

## GET api/v2/end\_devices

Collections can be paginated with **skip** and **limit** parameters. Defaults: skip: 0, limit: 25

```
method: 'get',
url: site + 'api/v2/end_devices',
params: {
  skip: skip,
  limit: limit,
  sort: 'eui'
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

---

## Response Code: 200

*Example response body of 1 end-device element in data array:*

```
{
  "data": [
    {
      "id": "03fcfc80-b5e7-4072-8c28-051ee9cae4b3",
      "type": "end_devices",
      "attributes": {
        "id": "03fcfc80-b5e7-4072-8c28-051ee9cae4b3",
        "conduit_serial": null,
        "organization_id": "408aaa46-b10f-4943-8070-3527a604843a",
        "eui": "01-11-22-11-22-11-22-99",
        "name": "Reliable Seq:99",
        "serial_number": "sn001001005",
        "product_id": "MTXD0T-NA1-A00-TG-200",
        "hardware_version": "1.0",
        "firmware_version": "3.0.2",
        "rejoin_count": 0,
        "created_at": "2019-10-18T16:00:42.128Z",
        "updated_at": "2019-10-21T17:10:05.922Z",
        "application_network_id": "0bbbc70a-88b9-4f4a-8a62-807fbf63ffcc",
        "uplink_counter": null,
        "downlink_counter": null,
        "last_seen": null,
        "device_profile_id": null,
        "network_profile_id": null,
        "organization_name": null
      }
    }
  ]
}
```

---

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## POST api/v2/end\_devices

```
method: 'post',
url: site + 'api/v2/end_devices',
data: {
  data: {
    type: 'end_devices',
    attributes: {
      eui: item.attributes.eui,           * Required *
      app_key: item.attributes.app_key || "aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa. aa", *
      name: item.attributes.name,
      serial_number: item.attributes.serial_number,
      product_id: item.attributes.product_id,
      firmware_version: item.attributes.firmware_version,
      hardware_version: item.attributes.hardware_version
    }
  }
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

---

**Example Post Parameters:**

```
{
  "data": {
    "attributes": {
      "app_key": "aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa",
      "application_network_id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
      "eui": "ab-ab-ab-0a-0a-0a-0a",
      "firmware_version": "fv01",
      "hardware_version": "hw01",
      "name": "Reliable End Device Create",
      "product_id": "pr01",
      "serial_number": "sn01"
    },
    "type": "end_devices"
  }
}
```

## Response Code: 200

**Example Response body:**

```
{
  "data": {
    "id": "4231d706-9217-4cba-9cb2-aa18146dcf6e",
    "type": "end_devices",
    "attributes": {
      "id": "4231d706-9217-4cba-9cb2-aa18146dcf6e",
      "conduit_serial": null,
      "organization_id": "408aaa46-b10f-4943-8070-3527a604843a",
      "eui": "ab-ab-ab-0a-0a-0a-0a",
      "name": "Reliable End Device Create",
      "serial_number": "sn01",
      "product_id": "pr01",
      "hardware_version": "hw01",
      "firmware_version": "fv01",
      "rejoin_count": 0,
      "created_at": "2019-10-23T20:09:57.752Z",
      "updated_at": "2019-10-23T20:09:57.752Z",
      "application_network_id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
      "uplink_counter": null,
      "downlink_counter": null,
      "last_seen": null,
      "device_profile_id": null,
    }
  }
}
```

---

```
    "network_profile_id": null,
    "organization_name": null,
    "status" : "active"
  },
  "relationships": {
    "application_network": {
      "data": {
        "id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
        "type": "application_networks"
      }
    },
    "organization": {
      "data": {
        "id": "408aaa46-b10f-4943-8070-3527a604843a",
        "type": "organizations"
      }
    },
    "gateways": {
      "data": []
    }
  }
}
```

---

## Response Code: 400

Provides an array of errors that occurred

### *Example payload response:*

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## PATCH `api/v2/end_devices/:id`

```
method: 'patch',
url: site + 'api/v2/end_devices/' + item_id,
data: {
  data: {
    type: 'end_devices',
    attributes: {
      application_network_id: application_network_id
    }
  }
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```



---

**Example Parameters for updating App Key:**

```
{
  "data": {
    "attributes": {
      "app_key": "aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.aa.99"
    },
    "type": "end_devices"
  }
}
```

## Response Code: 200

**Example response body:**

```
{
  "data": {
    "id": "4231d706-9217-4cba-9cb2-aa18146dcf6e",
    "type": "end_devices",
    "attributes": {
      "id": "4231d706-9217-4cba-9cb2-aa18146dcf6e",
      "conduit_serial": null,
      "organization_id": "408aaa46-b10f-4943-8070-3527a604843a",
      "eui": "ab-ab-ab-0a-0a-0a-0a",
      "name": "Reliable End Device Create",
      "serial_number": "sn01",
      "product_id": "pr01",
      "hardware_version": "hw01",
      "firmware_version": "fv01",
      "rejoin_count": 0,
      "created_at": "2019-10-23T20:09:57.752Z",
      "updated_at": "2019-10-23T20:09:57.752Z",
      "application_network_id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
      "uplink_counter": null,
      "downlink_counter": null,
      "last_seen": null,
      "device_profile_id": null,
      "network_profile_id": null,
      "organization_name": null
    },
    "relationships": {
      "application_network": {
        "data": {
```

---

```
      "id": "bfd809b2-fe80-473b-97ba-8d7b7e059703",
      "type": "application_networks"
    }
  },
  "organization": {
    "data": {
      "id": "408aaa46-b10f-4943-8070-3527a604843a",
      "type": "organizations"
    }
  },
  "gateways": {
    "data": []
  }
}
}
```

## Response Code: 400

### *Example payload response:*

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

---

## DELETE api/v2/end\_devices/:id

Deletion may also delete related join requests and packets with the `preserve_children` option. By default the action is false, so the `preserve_children` option only needs to be set when action is true.

### **Example preserve children deletion**

`https://lens-dev.devicehq.com/api/v2/end_devices/d6e5f88d-2790-4efd-ad93-00d42243111c?preserve_children=true`

```
method: 'delete',
url: site + 'api/v2/end_devices/' + item.id,
headers: {
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

## Response Code: 200

TBD

## Response Code: 400

Provides an array of errors that occurred

### **Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

---

# End Device States

## Description

**Unconfigured** –The end device is provisioned, but is not assigned to an application network. In this case there is no way for the end device to join a network.

**Configured** –The end device is provisioned and assigned to an application network, but has not joined a network.

**Initiated** –The end device has joined the network, but there is no record of an uplink. If the end device becomes active/inactive and then rejoins, the state returns to initiated.

**Active** –The end device becomes active when the first uplink for a join is received. The end device remains active as long as the uplinks occur at an expected frequency.

**Inactive** –The end device becomes inactive when the uplink does not occur at an expected frequency.

## Relationships

### Relationship to End Devices

An End Device State belongs to one and only one End Device. Both must belong to same Organization.

## Attributes

### eui

**Type:** String

**Format:** EUI

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Reference to end device for this state

`"eui": "99-01-8f-a0-67-89-aa-29",`

### organization-id

**Type:** String

**Format:** UUID

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Reference to organization URI

`"organization-id": "dae6160c-fc4e-4e9d-a755-32dd386d5d0d",`

---

## status

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** The status of the health check state  
"status": "inactive",

## joined-join-eui

**Type:** String

Format: EUI

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** The Join EUI when the end device successfully joined  
"joined-join-eui": "aa-11-aa-22-bb-33-cc-44",

## joined-application-network

**Type:** String

Format: EUI

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** The Application Network EUI that the end device joined through  
"joined-application-network": "08-8f-a0-00-00-00-bb-a6",

## joined-gateway

**Type:** String

Format: EUI

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** The Gateway EUI that the end device joined through  
"joined-gateway": "08-8f-a0-00-00-00-cc-a6",

---

## is-flagged

**Type:** Boolean

**Format:** true / false

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Reserved for future use

"is-flagged": false,

## flagged-annotation

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Reserved for future use

"flagged-annotation": "Creation ",

## description

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Description of status change

"description": "Creation",

## last-join

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the end device last joined successfully

"last-join": "2018-04-09T14:38:55.238Z",

---

## last-uplink

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the last metadata uplink was received from gateway

`"last-uplink": "2018-04-09T12:40:05.192Z",`

## create-at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the health check state was created for this end device

`"created-at": "2020-02-26T23:38:24.105Z",`

## updated-at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the health check state was last updated for this end device

`"updated-at": "2020-02-28T14:46:37.894Z",`

## device-name

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** Copy of end device name for this health check record

`"device-name": "Chuck Dev-29",`

---

## gateway-name

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Copy of gateway name that this end device state joined through  
"gateway-name": "Chuck A Gateway",

## app-name

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Copy of application network name that this end device joined through  
"app-name": "Chuck A AppNet"

## GET api/v2/end\_device\_states

```
method: 'get',
url: site + 'api/v2/end_device_states',
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

Sort Params

Example: [api/v2/end\\_device\\_states?page=1&sort=-status,+updated\\_at](#)

**Sortable params:** eui, status, joined\_join\_eui, joined\_application\_network, joined\_gateway, is\_flagged, flagged\_annotation, description, last\_join, last\_uplink, created\_at, updated\_at, last\_dev\_nonce, last\_join\_nonce

## Response Code: 200

Example response body of 1 end device state element in data array:

```
{
  "meta": {
    "summary": {
      "configured": 109,
      "inactive": 100
    }
  },
}
```



```

    "schedule": {
      "starting": "2020-12-01T12:20:38.622-06:00",
      "ending": "2020-12-01T12:20:39.503-06:00",
      "in-progress": false,
      "next": "2020-12-01T16:20:38.622-06:00"
    }
  }
}

{
  "data": [
    {
      "id": "11025251281874299433",
      "type": "end-device-states",
      "attributes": {
        "eui": "99-01-8f-a0-67-89-aa-29",
        "organization-id": "dae6160c-fc4e-4e9d-a755-32dd386d5d0d",
        "status": "inactive",
        "joined-join-eui": "aa-11-aa-22-bb-33-cc-44",
        "joined-application-network": "08-8f-a0-00-00-00-bb-a6",
        "joined-gateway": "08-8f-a0-00-00-00-cc-a6",
        "is-flagged": false,
        "flagged-annotation": "Creation ",
        "description": "Creation",
        "last-join": "2018-04-09T14:38:55.238Z",
        "last-uplink": "2018-04-09T12:40:05.192Z",
        "created-at": "2020-02-26T23:38:24.105Z",
        "updated-at": "2020-02-28T14:46:37.894Z",
        "device-name": "Chuck Dev-29",
        "gateway-name": "Chuck A Gateway",
        "app-name": "Chuck A AppNet"
      }
    }
  ]
}

```

---

## PATCH api/v2/end\_device\_states/:id/reset\_watchlist

```
method: 'patch',
url: site + 'api/v2/end_device_states/' + item.id + `/reset_watchlist`
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

### Response Code: 200

#### Example response body:

**Note:** is\_flagged is now false and flagged\_annotation indicates “Reset watchlist at <timestamp>”

```
{
  "data": {
    "id": "73881110357606658",
    "type": "end-device-states",
    "attributes": {
      "eui": "01-06-7a-7a-7a-01-02",
      "organization-id": "c2844336-b83c-4519-96aa-825a97348a11",
      "status": "active",
      "joined-join-eui": "aa-11-aa-22-bb-33-cc-44",
      "joined-application-network": "e0-69-b2-5f-5d-18-70-76",
      "joined-gateway": "00-80-00-00-a0-00-27-9d",
      "is-flagged": false,
      "flagged-annotation": "Reset watchlist at 2021-06-22 16:46:48 +0000",
      "description": " Updated Existing Record",
      "last-join": "2021-06-22T03:54:46.000Z",
      "last-uplink": "2021-06-22T03:55:22.924Z",
      "created-at": "2019-06-05T16:06:02.206Z",
      "updated-at": "2021-06-22T16:46:48.751Z",
      "device-name": "Crystal Shopping Carts Seq:02",
      "gateway-name": "Crystal (FSB-1 IP-111)",
      "app-name": "Carts"
    }
  }
}
```

## PATCH api/v2/end\_device\_states/:id/reset\_state

```
method: 'patch',
url: site + 'api/v2/end_device_states/' + item.id + `/reset_state`
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

---

```
}
```

## Response Code: 204

Response Status for Deleted / Purged Device is 204 with no-content

## Response Code: 200

Response Status for state reset is 200

### **Example response body:**

**Note:** status is now updated and flagged\_annotation indicates "Reset state at <timestamp>"

```
{
  "data": {
    "id": "73881110357606658",
    "type": "end-device-states",
    "attributes": {
      "eui": "01-06-7a-7a-7a-01-02",
      "organization-id": "c2844336-b83c-4519-96aa-825a97348a11",
      "status": "configured",
      "joined-join-eui": "aa-11-aa-22-bb-33-cc-44",
      "joined-application-network": "e0-69-b2-5f-5d-18-70-76",
      "joined-gateway": "00-80-00-00-a0-00-27-9d",
      "is-flagged": true,
      "flagged-annotation": "Reset state at 2021-06-21 14:49:32 +0000",
      "description": " Updated Existing Record",
      "last-join": null,
      "last-uplink": null,
      "created-at": "2019-06-05T16:06:02.206Z",
      "updated-at": "2021-06-21T14:49:32.951Z",
      "device-name": "Crystal Shopping Carts Seq:02",
      "gateway-name": "Crystal (FSB-1 IP-111)",
      "app-name": "Carts"
    }
  }
}
```

---

# Gateways

## Relationships

### Relationship to Application Networks

A Gateway belongs to one or more Application Networks. Both must belong to same Organization.

## Attributes

### conduit\_serial

**Type:** String

**Format:** None

**Permissions:** Required WriteOnce

**Restrictions:** None

**Description:** Serial number assigned to the gateway.

### eui

**Type:** String

**Format:** EUI

**Permissions:** Required WriteOnce

**Restrictions:** Unique to System

**Description:** Gateway EUI

### name

**Type:** String

**Format:** None

**Permissions:** Optional Updateable

**Restrictions:** None

**Description:** User defined name of gateway

### last\_seen

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Time of last report from the gateway.

---

## latitude

**Type:** Numeric

**Format:** floating point

**Permissions:** Optional Updateable [NOTE: System updated by some Conduit AEP versions]

Restrictions: None

**Description:** Location data of the gateway; can be reported by gateway if GPS is available.

## longitude

**Type:** Numeric

**Format:** floating point

**Permissions:** Optional Updateable [NOTE: System updated by some Conduit AEP versions]

Restrictions: None

**Description:** Location data of the gateway; can be reported by gateway if GPS is available.

## altitude

**Type:** Numeric

**Format:** floating point

**Permissions:** Optional Updateable [NOTE: System updated by some Conduit AEP versions]

Restrictions: None

**Description:** Location data of the gateway; can be reported by gateway if GPS is available.

## created\_at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

## updated\_at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: None

Description: TBD

---

## **organization\_id**

**Type:** String

**Format:** UUID

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** ID of the organization to which the gateway belongs

## **protocol\_version**

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Protocol version of the gateway. Provided by the gateway when it checks in.

## **ip\_address**

**Type:** String

**Format:** IPv4 Format

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Address of the packet forwarder. Provided by the gateway when it checks in.

## **ip\_port**

**Type:** Numeric

**Format:** Cardinal

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** UDP port of the packet forwarder. Provided by the gateway when it checks in.

## **uuid**

**Type:** String

**Format:** UUID

**Permissions:** Required WriteOnce

**Restrictions:** None

**Description:** Gateway UUID

---

## **lora\_gateway\_utils**

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

## **lora\_lens\_server\_bin**

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

## **lora\_network\_server**

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

## **lora\_network\_server\_bin**

**Type:** String

Format: None

**Permissions:** System-ReadOnly

Restrictions: N/A

Description: TBD

---

## **lora\_packet\_forwarder**

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** TBD

## **lora\_query**

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** TBD

## **aep\_version**

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Gateway firmware version

## **dhq\_data**

**Type:** JSON Object

**Format:** JSON

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** TBD

## **device\_management\_enabled**

**Type:** boolean

**Format:** string

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Enables DeviceHQ. This allows LENS to display data from DeviceHQ on the gateway details tab.



---

## recompute\_filters\_needed

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** TBD

## organization\_name

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** The organization's name.

## dhq\_account\_api\_key

**Type:** boolean

**Format:** N/A

**Permissions:** Required Optional NonReadable Updateable System-ReadOnly WriteOnce

**Restrictions:** Unique to System / Organization

**Description:** TBD

## status

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** One of Health Check status types: unconfigured, configured, initiated, active, warning

**Description:** See description above

---

## GET api/v2/gateways

Collections can be paginated with *skip* and *limit* parameters. Defaults: skip: 0, limit: 25

```
method: 'get',
url: site + 'api/v2/gateways',
params: {
  skip: skip,
  limit: limit,
  sort: 'eui'
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

---

## Response Code: 200

### Example payload response:

```
{
  "data": [
    {
      "id": "5c09f6cb-3295-4d74-891b-ea42310ccc33",
      "type": "gateways",
      "attributes": {
        "id": "5c09f6cb-3295-4d74-891b-ea42310ccc33",
        "conduit_serial": "18062240",
        "eui": "00-80-00-00-a0-00-0f-52",
        "name": "Reliable Workstation Gateway",
        "last_seen": "2019-10-24T17:14:49.919Z",
        "latitude": 45.0563308,
        "longitude": -93.1439917,
        "altitude": 10,
        "created_at": "2019-10-14T20:00:12.312Z",
        "updated_at": "2019-10-24T17:14:49.923Z",
        "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
        "protocol_version": null,
        "ip_address": null,
        "ip_port": null,
        "uuid": "116c209c-14e9-4eb6-8660-835cf3e70c92",
        "lora_gateway_utils": null,
        "lora_lens_server_bin": null,
        "lora_network_server": null,
        "lora_network_server_bin": null,
        "lora_packet_forwarder": null,
        "lora_query": null,
        "aep_version": null,
        "dhq_data": {},
        "device_management_enabled": false,
        "recompute_filters_needed": false,
        "organization_name": null,
        "status": "configured"
      }
    },
    {
      "id": "595d8a2f-4b58-4262-9d90-26f7d8947df2",
```

```
    "type": "gateways",
    "attributes": {
      "id": "595d8a2f-4b58-4262-9d90-26f7d8947df2",
      "conduit_serial": "sn01",
      "eui": "dd-ff-cc-cc-a0-00-00-00",
      "name": null,
      "last_seen": "2019-10-18T14:50:15.829Z",
      "latitude": null,
      "longitude": null,
      "altitude": null,
      "created_at": "2019-10-18T14:50:15.830Z",
      "updated_at": "2019-10-18T14:50:15.830Z",
      "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
      "protocol_version": null,
      "ip_address": null,
      "ip_port": null,
      "uuid": "ddddddd-dddd-dccc-cccc-ffffffffffff",
      "lora_gateway_utils": null,
      "lora_lens_server_bin": null,
      "lora_network_server": null,
      "lora_network_server_bin": null,
      "lora_packet_forwarder": null,
      "lora_query": null,
      "aep_version": null,
      "dhq_data": {},
      "device_management_enabled": false,
      "recompute_filters_needed": true,
      "organization_name": null
    }
  ],
  "meta": {
    "pagination": {
      "skip": 0,
      "limit": 100,
      "count": 2,
      "collection_count": 2
    }
  }
}
```

---

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## POST api/v2/gateways

```
method: 'post',
url: site + 'api/v2/gateways',
data: {
  data: {
    type: 'gateways',
    attributes: {
      conduit_serial: item.attributes.conduit_serial,
      eui: item.attributes.eui,
      uuid: item.attributes.uuid,
      name: item.attributes.name,
      latitude: item.attributes.latitude,
      longitude: item.attributes.longitude,
      altitude: item.attributes.altitude,
    }
  }
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

---

### Example Parameters

```
{
  "data": {
    "attributes": {
      "altitude": "",
      "conduit_serial": "sn01",
      "eui": "a1-a2-a3-a4-a5-a6-a7-a8",
      "latitude": "",
      "longitude": "",
      "name": "New Reliable Gateway",
      "uuid": "bbbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbbbbb"
    },
    "relationships": {
      "application_networks": {
        "data": [
          {
            "id": "bcb30a9-3f37-413c-a2c8-e0589ccdb200",
            "type": "application_networks"
          }
        ]
      }
    },
    "type": "gateway"
  }
}
```

### Response Code: 200

#### Example payload response:

```
{
  "data": {
    "id": "607ee818-c421-4bad-9f39-22da5171981a",
    "type": "gateways",
    "attributes": {
      "id": "607ee818-c421-4bad-9f39-22da5171981a",
      "conduit_serial": "sn01",
      "eui": "a1-a2-a3-a4-a5-a6-a7-a8",
      "name": "New Reliable Gateway",
      "last_seen": "2019-10-24T17:19:17.254Z",
      "latitude": null,
      "longitude": null,
      "altitude": null,
    }
  }
}
```

```

    "created_at": "2019-10-24T17:19:17.262Z",
    "updated_at": "2019-10-24T17:19:17.262Z",
    "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
    "protocol_version": null,
    "ip_address": null,
    "ip_port": null,
    "uuid": "bbbbbbbbb-bbbb-bbbb-bbbb-bbbbbbbbbbbb",
    "lora_gateway_utils": null,
    "lora_lens_server_bin": null,
    "lora_network_server": null,
    "lora_network_server_bin": null,
    "lora_packet_forwarder": null,
    "lora_query": null,
    "aep_version": null,
    "dhq_data": {},
    "device_management_enabled": false,
    "recompute_filters_needed": true,
    "organization_name": null,
    "dhq_account_api_key": false
  },
  "relationships": {
    "organization": {
      "data": {
        "id": "7786651b-3f20-4214-b077-ebe010688f12",
        "type": "organizations"
      }
    }
  },
  "application_networks": {
    "data": [
      {
        "id": "bcb30a9-3f37-413c-a2c8-e0589ccdb200",
        "type": "application_networks"
      }
    ]
  }
}
}
}

```

---

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## PATCH api/v2/gateways/:id

```
method: 'patch',
url: site + 'api/v2/gateways/' + item.id,
data: {
  data: {
    type: 'gateways',
    relationships: {
      application_networks: {
        data: [
          {
            id: application_network_id,
            type: "application_networks"
          }
        ]
      }
    }
  }
},
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```



---

### Example Parameters

```
{
  "data": {
    "attributes": {
      "altitude": "10.0",
      "latitude": "45.0563308",
      "longitude": "-93.1439917"
    },
    "type": "gateway"
  }
}
```

## Response Code: 200

### Example payload response:

```
{
  "data": {
    "id": "5c09f6cb-3295-4d74-891b-ea42310ccc33",
    "type": "gateways",
    "attributes": {
      "id": "5c09f6cb-3295-4d74-891b-ea42310ccc33",
      "conduit_serial": "18062240",
      "eui": "00-80-00-00-a0-00-0f-52",
      "name": "Reliable Workstation Gateway",
      "last_seen": "2019-10-24T17:01:28.429Z",
      "latitude": 45.0563308,
      "longitude": -93.1439917,
      "altitude": 10,
      "created_at": "2019-10-14T20:00:12.312Z",
      "updated_at": "2019-10-24T17:03:55.209Z",
      "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
      "protocol_version": null,
      "ip_address": null,
      "ip_port": null,
      "uuid": "116c209c-14e9-4eb6-8660-835cf3e70c92",
      "lora_gateway_utils": null,
      "lora_lens_server_bin": null,
      "lora_network_server": null,
      "lora_network_server_bin": null,
      "lora_packet_forwarder": null,
      "lora_query": null,
    }
  }
}
```

```

    "aep_version": null,
    "dhq_data": {},
    "device_management_enabled": false,
    "recompute_filters_needed": false,
    "organization_name": null,
    "dhq_account_api_key": false
  },
  "relationships": {
    "organization": {
      "data": {
        "id": "7786651b-3f20-4214-b077-ebe010688f12",
        "type": "organizations"
      }
    },
    "application_networks": {
      "data": [
        {
          "id": "bcbb30a9-3f37-413c-a2c8-e0589ccdb200",
          "type": "application_networks"
        }
      ]
    }
  }
},
"included": [
  {
    "id": "bcbb30a9-3f37-413c-a2c8-e0589ccdb200",
    "type": "application_networks",
    "attributes": {
      "id": "bcbb30a9-3f37-413c-a2c8-e0589ccdb200",
      "name": "Reliable AppNet1",
      "description": "reliable app net description",
      "url": "http://www.reliable.com",
      "created_at": "2019-10-14T19:53:02.694Z",
      "updated_at": "2019-10-23T19:31:19.138Z",
      "eui": "2b-b9-d4-e5-9d-e6-9a-b8",
      "organization_id": "7786651b-3f20-4214-b077-ebe010688f12",
      "network_profile_id": null,
      "container_id": "reliable container id",
      "container_name": "reliable container name",
      "organization_name": null
    }
  }
]

```

```
},
"relationships": {
  "organization": {
    "data": {
      "id": "7786651b-3f20-4214-b077-ebe010688f12",
      "type": "organizations"
    }
  },
  "gateways": {
    "data": [
      {
        "id": "5c09f6cb-3295-4d74-891b-ea42310ccc33",
        "type": "gateways"
      },
      {
        "id": "595d8a2f-4b58-4262-9d90-26f7d8947df2",
        "type": "gateways"
      }
    ]
  },
  "end_devices": {
    "data": [
      {
        "id": "a3a961bc-d502-4724-adba-a94755410705",
        "type": "end_devices"
      },
      {
        "id": "3e3d3676-4dc5-4c8f-b2a1-24d6bca2e5ef",
        "type": "end_devices"
      },
      * Repeated list of device object *
      {
        "id": "4db9f752-049e-4ca6-a36f-9208704d49a4",
        "type": "end_devices"
      }
    ]
  }
},
"meta": {
  "gateways_count": 2,
```

```
        "end_devices_count": 100
      }
    }
  ]
}
```

## Response Code: 400

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## DELETE `api/v2/gateways/:id`

```
method: 'delete',
url: site + 'api/v2/gateways/' + item.id,
headers: {
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

## Response Code: 200

TBD

## Response Code: 400

Provides an array of errors that occurred

**Example payload response:**

```
{
  "errors": [
    {
      "detail": "Eui has already been taken",
      "id": null
    }
  ]
}
```

```
    },
    {
      "detail": "Name has already been taken",
      "id": null
    }
  ]
}
```

## Gateway States

### Description

The gateway state indicates whether end devices have joined through the gateway or not. If end devices have joined, then the gateway state is derived from the end-device states.

**Unconfigured** –The gateway is provisioned, but does not belong to any application networks

**Configured** –The gateway is provisioned and assigned to at least one application network, but no end devices have joined through this gateway

**Initiated** –The gateway had one or more end devices that joined through this gateway that were set to initiated during the Health Check update

**Active** –The gateway had at least one active end device that joined through this gateway during the Health Check update (there may be initiated end devices as well, but at least one active)

**Warning** –The gateway has at least one inactive end device that joined through this gateway during the Health Check update (there may be initiated and active end devices as well, but at least one inactive)

### Relationships

#### Relationship to Gateways

A Gateway State belongs to one and only one Gateway. Both must belong to same Organization.

---

## Attributes

### eui

**Type:** String

**Format:** EUI

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** The Gateway EUI for this health check record.

`"eui": "08-8f-a0-00-00-00-cc-a6",`

### organization-id

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Reference to organization URI.

`"organization-id": "dae6160c-fc4e-4e9d-a755-32dd386d5d0d",`

### status

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** The health check status of gateway

`"status": "warning",`

### is-flagged

**Type:** Boolean

**Format:** true / false

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Reserved for future use

`"is-flagged": false,`

---

## flagged-annotation

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** The organization's name.

`"flagged-annotation": "Creation "`,

## description

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Description of health check creation and updates

`"description": "Creation",`

## last-join-request

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** When the last join request came through this gateway

`"last-join-request": "2018-04-14T11:05:11.027Z",`

## last-uplink

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** When the last metadata uplink came through this gateway

`"last-uplink": "2018-03-14T00:05:53.958Z",`

---

## last-checkin

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the last check-in for this gateway occurred  
"last-checkin": null,

## next-checkin

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When to expect the next check-in for this gateway  
"next-checkin": null,

## created-at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the gateway health check record was created  
"created-at": "2020-02-26T21:43:21.450Z",

## updated-at

**Type:** String

**Format:** Timestamp

**Permissions:** System-ReadOnly

Restrictions: N/A

**Description:** When the gateway health check record was last updated  
"updated-at": "2020-02-28T14:46:39.113Z",



---

## gateway-name

**Type:** String

**Format:** None

**Permissions:** System-ReadOnly

**Restrictions:** N/A

**Description:** Copy of gateway name for this gateway

```
"gateway-name": "Chuck A Gateway"
```

## GET api/v2/gateway\_states

```
method: 'get',
url: site + 'api/v2/gateway_states',
headers: {
  'content-type': 'application/vnd.api+json',
  'accept': 'application/vnd.api+json',
  'x-auth-token': auth_token
}
```

Sort Params

Example: [api/v2/gateway\\_states?page=1&sort=-status,+updated\\_at](#)

**Sortable params:** eui, status, is\_flagged, flagged\_annotation, description, last\_join\_request, last\_uplink, last\_checkin, next\_checkin, created\_at, updated\_at

## Response Code: 200

Example response body of 1 application network state element in data array:

```
{
  "meta": {
    "summary": {
      "warning": 1
    },
    "schedule": {
      "starting": "2020-12-01T12:20:38.622-06:00",
      "ending": "2020-12-01T12:20:39.503-06:00",
      "in-progress": false,
      "next": "2020-12-01T16:20:38.622-06:00"
    }
  }
}
```

---

```
{
  "data": [
    {
      "id": "616887595833543846",
      "type": "gateway-states",
      "attributes": {
        "eui": "08-8f-a0-00-00-00-cc-a6",
        "organization-id": "dae6160c-fc4e-4e9d-a755-32dd386d5d0d",
        "status": "warning",
        "is-flagged": false,
        "flagged-annotation": "Creation ",
        "description": "Creation",
        "last-join-request": "2018-04-14T11:05:11.027Z",
        "last-uplink": "2018-03-14T00:05:53.958Z",
        "last-checkin": null,
        "next-checkin": null,
        "created-at": "2020-02-26T21:43:21.450Z",
        "updated-at": "2020-02-28T14:46:39.113Z",
        "gateway-name": "Chuck A Gateway"
      }
    }
  ]
}
```