# AudioCodes Redirect Service RESTful Application Programming Interface (API)

**audiocodes**

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## Abbreviations and Terminology

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## Document Revision Record

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# 1 REST Navigation Tree

The REST API is available at https://redirectapp.audiocodes.com/api/v1.

The following is the REST API Redirect Server tree structure available for REST requests:

| | | | |
|---|---|---|---|
| /login | | | |
| /groups | | | |
| | /{id} | | |
| /devices | | | |
| | /{id} | | |
| | /remove | | |
| /locations | | | |
| | /{id} | | |
| | /remove | | |
| | | /devices | |
| | | | /associate |
| | | | /disassociate |
| /users | | | |
| | /{id} | | |
| | /me | | |

## 1.1 Authentication

To successfully authenticate with the Redirect Server application, the user must first login using the Login REST request (See Section 2 on page 9) to the Redirect Server application.

Use the **access token** returned in the Login response to authenticate subsequent REST API requests. Any REST request is authenticated by token authentication.

The Token type value is "Bearer".

The Authorization header should be:

```
Authorization: <type> <token>
```

For example:

```
Authorization: Bearer
cn389ncoiwuencreyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsImtpZCI6
```

The token must be the access token returned from the Login response.

**Note:** The access token has an expiration time and the user must perform a new login once the token has expired.

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# 2    Login

Before the accessing the Redirect server backend REST API, the user must login to the application to acquire the access token, which is used as the "Bearer" token in subsequent API requests Authorization header.

```
POST redirectapp.audiocodes.com/api/v1/login
Content-Type: application/json
{
    "userName": "aviu",
    "password": "123456"
}
```

```
Response

HTTP/1.1 200 OK

Content-Type: application/json
{
    "user": {
        "id": 3,
        "firstName": "Avi",
        "lastName": "Uri",
        "groupType": "Reseller",
        "groupName": "Reseller",
        "permissionLevel": "Administrator",
        "email": "aviu@gmail.com",
        "description": "",

        "lastLoginStatus": "Success",
        "failLoginAttempts": 0,
        "login": " aviu",
        "group": 1,
        "phone1": "0523333333333",
        "phone2": "08555555555522",
        "userBlockTime": null,
        "lastLogin": "2019-06-25T09:26:05+0000"
        },
    "access_token":"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsImtpZCI6
",
    "token_type": "Bearer",
    "expires_in": "3600",

    "refresh_token":"eJraWQiOiJjcGltY29yZV8wOTI1MjAxNSIsInZlciI6
IjEuMCIs",
    "id_token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUz",
```

```
        "description": "Login succeeded"
}
```

The following attributes must be included in Login request body:

| Attribute | Type | Description | Required |
|-----------|------|-------------|----------|
| userName | String | Login name | Mandatory |
| password | String | User password | Mandatory |

A successful login response with **200 OK** and its body includes the following attributes:

| Attribute | Type | Description |
|-----------|------|-------------|
| access_token | String | Defines the token to access the Redirect Server API with. |
| description | String | Defines the description of the login status. |
| expires_in | Number | Defines the access token expiration in seconds. |
| id_token | String | Defines the User Id token. **Note:** This is for UI use only. Users need to login again via login REST. See Section 1.1 on page 7. |
| refresh_token | String | Defines the Refresh token for access token. **Note:** This is for UI use only. Users need to login again via login REST. See Section 1.1 on page 7. |
| token_type | String | Defines the Access token type. |
| user | User JSON See the Attribute table on page 42 | User details |

> **Note:** Users need to login again via login REST. See Section 1.1 on page 7.

A failed login response body includes the following attributes:

| Attribute | Type | Description |
|-----------|------|-------------|
| **description** | String | Defines the Failure reason. |
| **forceChangePasswordNextLogin** | Boolean | Indicates if the user is required to change password on the next login. |

# 3   Change User Password

If the user is required to change the password on the next login, use this REST request to change the password.

```
POST redirectapp.audiocodes.com/api/v1/changePassword
Content-Type: application/json
{
    "userName": "aviu",
    "oldPassword": "123456",
    "newPassword":"1234567"
}
```

```
Response
HTTP/1.1 200 OK
Content-Type: application/json
```

The following attributes must be included in the login request body:

| Attribute | Type | Description | Required |
|-----------|------|-------------|----------|
| **userName** | String | Defines the Login name. | Mandatory |
| **oldPassword** | String | Defines the user's current password. | Mandatory |
| **newPassword** | String | Defines the user's new password | Mandatory |

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# 4    Filters

The following filters are used in the GET API requests.

Filters should be added to the suffix of the URL, for example:

```
GET
redirectapp.audiocodes.com/api/v1/devices?filter=(group=1,assigned=true,s
earch~'hi there')
```

The following is a list of available filters:

| Filter | Type | Available for These APIs | Description | Available Operators |
|--------|------|--------------------------|-------------|---------------------|
| group | Number | devices, locations, users | Filters results only for the group id specified | = |
| assigned | Boolean | devices | Filters results only for devices with assigned/unassigned location:<br>• assigned=true: returns only devices assigned to a location<br>• assigned=false: returns only devices that are not assigned to any location<br>• assigned filter is missing: returns all devices, assigned and unassigned. | = |
| search | String | devices, locations, users | Filters according to any attribute (Contains ~) | ~ |

The following Query parameters are used in GET API requests. They should be added to the suffix of the URL, for example:

```
GET redirectapp.audiocodes.com/api/v1/devices?sort=-
id&depth=1&page=1&limit=25
```

Available Query parameters:

| Query Parameter | Type | Available for These APIs | Description |
|-----------------|------|--------------------------|-------------|
| sort | String | devices<br>locations<br>users | Sorts the result according to the column name that was sent, if "-" was sent in the beginning descending order will be used.<br>for example &sort=name or &sort=-name |
| depth | Enum Number | groups<br>devices<br>locations<br>users | Defines the GET results that belong to groups in level of depth.<br>• depth=0: get result only for high-level groups<br>• depth=1: get result for high-level groups and their sub groups<br>• if depth is not present default behavior is depth=1 |
| limit | Number | devices, locations, users | Defines the page size, default limit=25 |
| page | Number | devices, locations, users | Defines the page number, starting from 1, default page=1 |

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# 5    JavaScript Object Notation Filter (JSON) Format

The following is a JavaScript Object Notation (JSON) filter example.

**Filter Example**

```
?filter=(group=115)
```

**Filter Expression Syntax**

A filter expression defines search criteria in this format:

```
{field_name} {comparison operator} {field_value}
```

- `{field_name}` is the name of the object depends on the relevant module i.e. *group* (list of available names in each module is provided in the *filters* table).
- `{comparison operator}` Used to compare a field to a value i.e., '=' (list of available names in each module is provided in the *operators* table)

**Considerations**

- Spaces are legal in filter expressions.
- Quotes are needed around dates and strings. They are not needed around numbers.

**Build Filter Expression**

The available filter fields are described in Section 4 on page 13.

**Operators Table**

| Operator | Description |
|----------|-------------|
| = | Is equals to<br>Returns only records with the specified value (Numeric, Strings, Boolean, date values) |
| != | Not Equals to<br>Returns only records do not include the specified value (Numeric, Strings, Boolean, date values) |
| < | Less than (only for numeric, date values) |
| > | Greater than (only for numeric, date values) |
| <= | Less than or equals (only for numeric, date values) |
| >= | Greater than or equals (only for numeric, date values) |
| ~ | Returns only records that contain the specified value (only for strings) |
| !~ | Returns only records that do not contain the specified value (only for strings) |

> **Note:** Only = and ~ operators are supported for now. Other operators may be supported in the future.

`{value}` – Defines the search value - a string, a date, a number.

- **String:** '10.4.100.5'
- **Date:** '2008-11-25T14:00:13'
- **Numeric Value:** 9383
- **Empty Field:** ''

**Format Guidelines**

- Enclose strings and date/time values in 'single quotes'
- To specify date values, use the Date Format: refer to Section 12 on page 51.
- To search for a blank (empty) string, use two single quotes, with nothing between them ('').

**Logical Operations**

The logical AND(,) are between all the filter fields (high level), logical OR(;) just for values inside the same field.

General format: `filter=(X=1;2;4,y>6,y<9,z~'test')`.

Example:
`?filter=(group=10;20,assigned=true,search~'avi')`

Logical Query:

(group =10 OR group=20) AND assigned=true AND search contains 'avi'

> **Note:** Only AND(,) is supported at this stage.

**Filter Expression Guidelines and Limitations**

- Using REST requests with unknown filter fields must return "Bad Request".

# 6     Paging

Devices, Locations and Users GET APIs include paging.

- Default page size is 25 elements limit per page.
- Default current page number is 1.

To go through pages and changing the default page size limit, use `page` and `limit` filters. See Section 4 on page 13.

The following attributes are added in the end of the JSON response for the following API requests:

- GET all devices
- GET all locations
- GET all users
- Get location device association

The following attributes are included in the Json pages:

| Attribute | Type | Description |
|---|---|---|
| **Current** | Number | Defines the current page number. |
| **Size** | Number | Defines the size of each page. |
| **Total** | Number | Defines the total number of existing pages. |
| **totalElements** | Number | Defines the total elements. |

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# 7      Groups API

The following describes the Groups API commands.

## 7.1      GET Group

GET groups in Redirect sever according to user permission level.

```
GET redirectapp.audiocodes.com/api/v1/groups
GET redirectapp.audiocodes.com/api/v1/groups/{id}
```

{id} – id of the requested group

**Available Filters and Query Parameters**: depth (See Section 4 on page 13).

The Redirect server responds to the GET request with a **200 OK** response and includes JSON data that depends on what's specified in the request URI element and its ID. If the ID was not specified in the GET request URI, JSON data must contain an array of all groups.

If no group is found, it returns a **204 No Content** response.

The following attributes are included in JSON response (group_json):

| Attribute | Type | Description |
|---|---|---|
| **id** | Number | Defines the Group Id. |
| **name** | String | Defines the Group Name. |
| **groupType** | String Enum | Defines the Group Type:<br>▪ Reseller<br>▪ Provider |
| **address** | String | Defines the Group Address. |
| **description** | String | Defines the Group Description. |
| **resellerId** | Number | Only applicable for a Provider Group.<br>Defines the Id of the provider's reseller. |
| **locationCount** | Number | Defines the number of locations in the group. |
| **deviceCount** | Number | Defines the number of devices in the group. |
| **providers** | Array of group_json | This is an array of its providers groups. Applicable for a reseller. |

## 7.1.1    GET all Groups Example

```
GET redirectapp.audiocodes.com/api/v1/groups
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "groups": [
        {
                "id": 4,
                "name": "provider 4 of reseller 2",
                "groupType": "Provider",
                "address": "address 1",
                "description": "provider 4 desc",
                "resellerId": 2,
                "locationCount": 1,
                "deviceCount": 2,
                "providers": []
            },
            {
                "id": 6,
                "name": "provider 6 of reseller 2",
                "groupType": "Provider",
                "address": "aaa",
                "description": "second provider of reseller
2",
                "resellerId": 2,
                "locationCount": 1,
                "deviceCount": 1,
                "providers": []
            }
    ]
}
```

## 7.1.2   GET Single Group Example

```
GET redirectapp.audiocodes.com/api/v1/groups/6
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
   {
   "id": 6,
   "name": "provider 6 of reseller 2",
       "groupType": "Provider",
       "address": "aaa",
       "description": "second provider of reseller 2",
       "resellerId": 2,
       "locationCount": 1,
       "deviceCount": 1,
       "providers": []
   }
```

## 7.1.3 Creating a Single Group

To create a new group, send the following REST request:

```
POST redirectapp.audiocodes.com/api/v1/groups
```

The Request body must include the following attributes:

| Attribute | Type | Description | Required? |
|-----------|------|-------------|-----------|
| **name** | String | Defines the Group name. | Mandatory |
| **groupType** | String Enum | Defines the Group Type:<br>▪ Reseller<br>▪ Provider | Mandatory |
| **address** | String | Defines the Group address. | Optional |
| **description** | String | Defines the Group description. | Optional |
| **resellerId** | Number | Only for a Provider Group<br>Defines the Id of the provider's reseller. | Optional or<br>Conditional – only with groupType=Provider |

Example:

```
POST redirectapp.audiocodes.com/api/v1/groups
Content-Type: application/json
{
    "name":"group 1",
    "groupType": "Provider",
    "address": "Gan Yavne Israel",
    "description": "Example group description",
    "resellerId":2
}
Response
HTTP/1.1 201 CREATED
Content-Type: application/json
{
    "id": 3,
    "url": "{URL_PREFIX}/groups/3"
}
```

If the group was created successfully, a **201 Created** response is received.

## 7.2    Modifying a Single Group

To modify a single group, send the following REST request:

```
PUT redirectapp.audiocodes.com/api/v1/groups/{id}
```

{id} – Refers to the Id of the requested group.

The request must contain the following data elements:

| Attribute | Type | Description | Required? |
|---|---|---|---|
| **id** | Number | Group id | Optional, non-modifiable |
| **name** | String | Group name | Optional |
| **address** | String | Group address | Optional |
| **description** | String | Group description | Optional |

Example:

```
PUT redirectapp.audiocodes.com/api/v1/groups/3
Content-Type: application/json
{
    "name": "group 2",
    "address": "Second address",
    "description": "New description"
}
Response
HTTP/1.1 200 OK
Content-Type: application/json
```

## 7.3    Deleting a Single Group

To delete a single group, send the following REST request:

```
DELETE redirectapp.audiocodes.com/api/v1/groups/{id}
Response
HTTP/1.1 200 OK
```

{id} – id of the requested group

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# 8    Devices API

The following describes the Groups API commands.

## 8.1    REST MAC Formats

REST requests accept two MAC formats:

- Standard 6*2 alphanumeric characters separated by a colon `:`
  For example:
  00:A0:C9:14:C8:29
- A sequence of 12 alphanumeric characters without a colon `:`
  For example:
  00A0C914C829

REST responses always return the MAC in the first format.

## 8.2    GET Device

To use the GET Device command, send the following REST request:

```
GET redirectapp.audiocodes.com/api/v1/devices
GET redirectapp.audiocodes.com/api/v1/devices/{id}
GET redirectapp.audiocodes.com/api/v1/devices/{mac} (not available
yet)
```

{mac} – mac of the requested device (mac format is the second option)

{id} – id of the requested device

**Available filters**: (See Section 4 on page 13)

- group
- assigned
- search (text search across mac, locationId, groupName and description)
- sort (for all parameters in table below)
- depth
- page
- limit

The Redirect server responds to the GET request with a **200 OK** response and includes JSON data that depends on what's specified in the request URI element and its ID. If the MAC\id was not specified in GET request URI, JSON data will contain an array of all devices and paging information (See Section 5 on page 15).

If no device was found, it returns a **204 No Content** response.

The following attributes are included in JSON response:

| Attribute | Type | Description |
|---|---|---|
| **id** | Number | Defines the identification of the device. |
| **mac** | String | Defines the MAC of the device. See the MAC format in Section 8.1 on page 25. |
| **groupId** | Number | Defines the Id of the group the device belongs to. |
| **groupName** | String | Defines the name of the group the device belongs to. |
| **locationId** | Number | Defines the Id of the location the device is associated to. |
| **locationUrl** | String | Defines the location the device is associated to. |
| **lastAccessStatus** | String Enum | Defines the status of the last access of the device to the MAC API Success/Fail/Await access |
| **lastAccess** | DateTime See Section 12 on page 51. | Defines the date and time of the last device access to MAC API |
| **numRequests** | Number | Defines the number of times the device is accessed to the MAC API. |
| **description** | String | Defines additional information about the device |

## 8.2.1 GET all Devices Example

```
GET redirectapp.audiocodes.com/api/v1/devices
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "devices": [
        {
            "id": 3,
            "mac": "112233444444",
            "groupId": 2,
            "groupName": "reseller of id 2",
            "locationId": 2,
            "locationUrl": "https://www.google.co.il/",
            "lastAccessStatus": "Success",
            "numRequests": 3,
            "description": null,
            "lastAccess": "2019-04-04T09:37:04+0000"
        },
```

```
        {
            "id": 6,
            "mac": "552255225522",
            "groupId": 4,
            "groupName": "provider 4 of reseller 2",
            "locationId": null,
            "locationUrl": null,
            "lastAccessStatus": "Fail",
            "numRequests": 1,
            "description": null,
            "lastAccess": null
        }
    ],
    "pages": {
        "total": 1,
        "totalElements": 2,
        "current": 1,
        "size": 25
    }
}
```

## 8.2.2 GET Single Device Example

```
GET redirectapp.audiocodes.com/api/v1/devices/112233444444
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
            "id": 3,
            "mac": "112233444444",
            "groupId": 2,
            "groupName": "reseller of id 2",
            "locationId": 2,
            "locationUrl": "https://www.google.co.il/",
            "lastAccessStatus": "Success",
            "numRequests": 3,
            "description": null,
            "lastAccess": "2019-04-04T09:37:04+0000"

}
```

## 8.3    Creating Multiple Devices

To create multiple devices, send the following REST request:

```
POST redirectapp.audiocodes.com/api/v1/devices
```

The Request body includes the following attributes:

| Attribute | Type | Description | Required? |
|---|---|---|---|
| **group** | Number | Defines the identification of the device. | Mandatory |
| **locationId** | Number | Defines the identification of the location. | Optional |
| **macList** | Array of strings, max 5000 | Defines the MAC list of devices to create.<br>MAC format: See Section 8.1 on page 25. | Mandatory |
| **overrideCurrent Association** | Boolean (true/false) | Indicates whether or not to override location association if one exists. | Mandatory |
| **description** | String | Describes the of devices. | Optional |

Example:

```
POST redirectapp.audiocodes.com/api/v1/devices
Content-Type: application/json
{
    "group": 2,
    "locationId": 3,
    "macList": ["00A0C914C829", … ,"1123235544"],
    "overrideCurrentAssociation": true,
    "description": "Israel"
}
Response
HTTP/1.1 201 CREATED
Content-Type: application/json
{
    "success":{
        "count":7,
        "macList":["00A0C914C829", … "1123235544"]
    },
    "invalidMAC":{
        "count":4,
        "macList":[MAC1, … MAC4]
    },
    "duplicateMACSameGroup":{
        "count":5,
        "macList":[MAC1, … MAC5]
    },
    "duplicateMACOtherGroup":{
```

```
            "count":0,
            "macList":[]
    }
}
```

For a successful response, a **201 CREATED** is returned and the body must include the following attributes:

| Attribute | Type | Description |
|---|---|---|
| **success** | {<br>"count":0,<br>"macList":[]<br>}<br>count: Number, Number of MACs<br>macList: String Array, Array of MACs | Defines the information of MAC devices that were successfully added.<br>MAC format: See Section 8.1 on page 25. |
| **invalidMAC** | {<br>"count":0,<br>"macList":[]<br>}<br>count: Number, Number of MACs<br>macList: String Array, Array of MACs | Defines the information of invalid MACs.<br>MAC format: See Section 8.1 on page 25. |
| **duplicateMACSameGroup** | {<br>"count":0,<br>"macList":[]<br>}<br>count: Number, Number of MACs<br>macList: String Array, Array of MACs | Information of devices MACs that already exist in this group.<br>MAC format: See Section 8.1 on page 25. |
| **duplicateMACOtherGroup** | {<br>"count":0,<br>"macList":[]<br>}<br>count: Number, Number of MACs<br>macList: String Array, Array of MACs | Defines the information of MAC devices that already exist in a different group.<br>MAC format: See Section 8.1 on page 25. |

## 8.4    Deleting Multiple Devices

To delete multiple devices, send the following REST request.

This deletes all devices that have an existing MAC in the MAC LIST.

```
POST redirectapp.audiocodes.com/api/v1/devices/remove
Content-Type: application/json
{
    "macList":[MAC1, … MACn] //list of devices MACs to delete
}
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "deleted":25 //number of deleted devices
}
```

MAC format: See Section 8.1 on page 25.

> **Note:** The **Delete** action is performed by the POST REST request.
>
> - A successful response body returns **200 OK** with the body indicating the number of deleted devices.
> - It returns a **400 Error**, if the MAC address in the device list does not exist, or does not belong to the specified group.
> - It returns an error with an error description, if not all devices are removed, and if no device is deleted.

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# 9 Locations API

This section describes the Location API commands.

## 9.1 Location URL Format

Location supports the following URL format:

```
[Protocol]://[FQDN or IP Address]:[Port]/[path]
```

- Protocol is mandatory and can be a free text of 1-10 characters
- FQDN must be in valid FQDN format
- IP Address must be valid IPv4 address
- Either FQDN or IP must be defined
- Port part is optional. If it exists, it must be a number in the range of 1-65535
- Path part is optional and can contain a string of up to 1000 characters
- Location attribute support placeholders for MAC address and customer name, must be in the following format
  - {MAC ADDRESS}
  - {CUSTOMER NAME}

## 9.2 GET Location

To use GET location, send the following REST request:

```
GET redirectapp.audiocodes.com/api/v1/locations
GET redirectapp.audiocodes.com/api/v1/locations/{id}
```

{id} – id of the requested location

**Available filters**: (See Section 4 on page 13)

- group
- search (text search across all attributes in table below)
- sort (for all attributes in table below)
- depth
- page
- limit

The Redirect server must respond to the GET request with a **200 OK** response and include JSON data that depends on what's specified in request URI element and its Id. If the Id was not specified in the GET request URI, JSON data must contain an array of all locations and paging information (See Section 5 on page 15).

If no location was found, it returns a **204 No Content** response.

The following attributes are included in JSON response:

| Attribute | Type | Description |
|---|---|---|
| **id** | Number | Identification of location |
| **url** | String | Location path. Refer to Section 9.1 for url format |
| **groupId** | Number | Id of the group the location belongs to |
| **groupName** | String | Name of the group the location belongs to |
| **numDevices** | Number | Number of devices associated with this location |
| **description** | String | Additional information about the location |
| **lastAccess** | DateTime<br><br>See Section 12 on page 51. | Last time a device requested this location |
| **mutualAuth** | Boolean (true/false) | Enforces TLS mutual authentication (mTLS) on the client (device). By default, mTLS is disabled. |

## 9.2.1 GET all Locations Example

```
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "locations": [
        {
            "id": 2,
            "url": "https://www.google.co.il/",
            "groupId": 2,
            "groupName": "reseller of id 2",
            "numDevices": 1,
            "description": null,
            "lastAccess": null
        },
        {
            "id": 4,
            "url": "http://location/of/configuration/4",
            "groupId": 4,
            "groupName": "provider 4 of reseller 2",
            "numDevices": 0,
            "description": null,
            "lastAccess": null
        },
        {
            "id": 6,
            "url": "http://location/of/configuration/6",
            "groupId": 6,
            "groupName": "provider 6 of reseller 2",
            "numDevices": 0,
            "description": null,
```

```
            "lastAccess": null
        }
    ],
    "pages": {
        "total":1,
        "totalElements": 3,
        "size": 25,
        "current":1
    }
}
```

### 9.2.2   GET Single Location Example

```
GET redirectapp.audiocodes.com/api/v1/locations/6
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
            "id": 6,
            "url": "http://location/of/configuration/6",
            "groupId": 6,
            "groupName": "provider 6 of reseller 2",
            "numDevices": 0,
            "description": null,
            "lastAccess": null
}
```

## 9.3   Creating a Single Location

To create a single location, send the following REST request:

```
POST redirectapp.audiocodes.com/api/v1/locations
```

Request body includes the following attributes:

| Attribute | Type | Description | Required |
|-----------|------|-------------|----------|
| url | String | Defines the Location path. See Section 9.1 on page 33 for the URL format. | Mandatory |
| groupId | Number | Defines the Id of the group the location belongs to. | Mandatory |
| description | String | Defines additional information about the location. | Optional |
| mutualAuth | Boolean (true/false) | Enforces TLS mutual authentication (mTLS) on the client (device). By default, mTLS is disabled. | Optional |

```
POST redirectapp.audiocodes.com/api/v1/locations
Content-Type: application/json
{
    "url": "http://location/of/configuration/6",
    "groupId": 6,
    "description": null
}
Response
HTTP/1.1 201 CREATED
Content-Type: application/json
{
    "id": 1,
    "url": "/api/v1/locations/1"
}
```

## 9.4    Modifying a Single Location

To modify a single location, send the following REST request:

```
PUT redirectapp.audiocodes.com/api/v1/locations/{id}
```

{id} – id of the requested location

Request body includes the following attributes:

| Attribute | Type | Description | Required ? |
|---|---|---|---|
| **url** | String | Defines the Location path. Refer to Section 9.1 on page 33 for the URL format | Mandatory |
| **description** | String | Describes additional information about the location | Optional |
| **mutualAuth** | Boolean (true/false) | Enforces TLS mutual authentication (mTLS) on the client (device). By default, mTLS is disabled. | Optional |

```
PUT redirectapp.audiocodes.com/api/v1/locations/{id}
Content-Type: application/json
{
    "url": "http://location/of/configuration/6",
    "description": null
}
Response
HTTP/1.1 200 OK
Content-Type: application/json
```

## 9.5    Deleting a Single Location

To delete a single device, send the following REST request:

```
DELETE redirectapp.audiocodes.com/api/v1/locations/{id}
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
```

{id} – id of the requested location

## 9.6    Deleting Multiple Locations

Deletes locations that have an Id that exists in the Id LIST.

```
POST redirectapp.audiocodes.com/api/v1/locations/remove
```

Request body includes the following attributes:

| Attribute | Type | Description | Required ? |
|---|---|---|---|
| **idList** | Numbers Array | Non-empty array of locations id to delete | Mandatory |

Response body includes the following attributes:

| Attribute | Type | Description | Required ? |
|---|---|---|---|
| **deleted** | Number | Number of locations deleted successfully | |
| **fail** | | | |

```
POST redirectapp.audiocodes.com/api/v1/locations/remove
Content-Type: application/json
{
    "idList":[id_1, … id_10] //list of locations id's to delete
}
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "deleted": 7
    "fail":{
        "count":3,
        "locations":[
            "location/url/1",
            "location/url/2",
            "location/url/3"
        ]
    }
}
```

> ⚠️ **Note:** The **delete** action is performed by the POST REST request.

## 9.7    GET Location Device Association

The following request returns all devices associated to a specific location.

```
GET redirectapp.audiocodes.com/api/v1/locations/{id}/devices
Content-Type: application/json
```

{id} – id of the requested location association

**Available Query Filters**: (See Section 4 on page 13)

■    page
■    limit

```
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "devices": [
        {
            "id": 3,
            "mac": "112233444444",
            "groupId": 2,
            "groupName": "reseller of id 2",
            "locationId": 2,
            "locationUrl": "https://www.google.co.il/",
            "lastAccessStatus": "Success",
            "numRequests": 3,
            "description": null,
            "lastAccess": "2019-04-04T09:37:04+0000"
        }
    ],
    "pages": {
        "total":1,
        "totalElements": 1,
        "size": 25,
        "current":1
    }
}
```

In addition to paging data (See Section 5 on page 15), the attributes of the GET device response are included in the JSON response (refer to table in Section 8.2 on page 25.).

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# 10 Users API

This section describes the Users API commands.

## 10.1 User Permissions

There are three permission levels for a user:

■ Administrator

■ Operator

■ Monitor

Users have permissions according to their group association and permission level:

| Action Type | Group | Permission Level | Scope |
|---|---|---|---|
| View groups | Reseller | Any | Own Reseller and child providers |
| View groups | Provider | Any | Own Provider |
| View locations | Reseller | Any | Own Reseller and child providers |
| View locations | Provider | Any | Own Provider Own Reseller and child providers |
| View devices | Reseller | Any | Own Reseller and child providers |
| View devices | Provider | Any | Own Provider |
| View Users | Reseller | Administrator | Own Reseller and child providers |
| View Users | Provider | Administrator | Own Provider |
| View User | Any | Any | Own user only |
| Create/Update/Delete User | Reseller | Administrator | Own Reseller and child providers |
| Create/Update/Delete User | Provider | Administrator | Own Provider |

## 10.2 GET User

```
GET redirectapp.audiocodes.com/api/v1/users
GET redirectapp.audiocodes.com/api/v1/users/me
GET redirectapp.audiocodes.com/api/v1/users/{id}
```

{id} – id of the requested user

**Available filters**: (See Section 4 on page 13)

■ group

■ search (text search across all attributes in table below)

■ sort (for all attributes in table below)

■ depth

- ■ page
- ■ limit

The Redirect server must respond to the GET request with the **200 OK** response and includes JSON data that depends on what's specified in request URI element and its id.

`GET redirectapp.audiocodes.com/api/v1/users` response must contain an array of all users and paging information (See Section 5 on page 15).

If no user was found, returns **204 No Content** response.

The following attributes MUST be included in the JSON response:

| Attribute | Type | Description |
|---|---|---|
| **id** | Number | Defines the User Id. |
| **firstName** | String | Defines the user's first name. |
| **lastName** | String | Defines the user's last name. |
| **groupType** | String Enum | Defines the Group Type:<br>▪ Reseller<br>▪ Provider |
| **groupName** | String | Defines the Group name. |
| **permissionLevel** | String Enum | Defines the User Permission Level.<br>▪ Administrator<br>▪ Operator<br>▪ Monitor |
| **email** | String | Defines the user's email address. |
| **description** | String | Defines additional information about the user. |
| **lastLoginStatus** | String Enum | Defines the last login attempt status:<br>▪ Success<br>▪ Fail |
| **failLoginAttempts** | Number | Defines the number of failed login attempts of this user. |
| **login** | String | Defines the Login name. |
| **group** | Number | Defines the Group Id. |
| **phone1** | String | Defines the user's primary phone number. |
| **phone2** | String | Defines the user's secondary phone number. |
| **lastLogin** | DateTime<br>See Section 12 on page 51. | Defines the time of last login attempt. |
| **userBlockTime** | DateTime<br>See Section 12 on page 51. | If the user was blocked, defines the time the user has been blocked by the system. |
| **forceChangePasswordNextLogin** | Boolean | Indicates if a user is required to change password on the next login. |

### 10.2.1 Get All Users Example

```
GET redirectapp.audiocodes.com/api/v1/users
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "users": [
            {
                "id": 1,
                "firstName": "avi",
                "lastName": "umaha",
                "groupType": "Provider",
                "groupName": "provider 1",
                "permissionLevel": "Administrator",
                "email": "aviu@mydomain.com",
                "description": "great",
                "forceChangePasswordNextLogin":false,
                "lastLoginStatus": "Success",
                "failLoginAttempts": 0,
                "login": "aviu",
                "group": 1,
                "phone1": "054852188445",
                "phone2": null,
                "lastLogin": "2019-04-28T18:16:04+0000",
                "userBlockTime": null
        },
            …
    ] ,
    "pages": {
        "total":1,
        "totalElements": 1,
        "size": 25,
        "current":1
    }
}
```

### 10.2.2 Get Single User Example

```
GET redirectapp.audiocodes.com/api/v1/user/1
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "id": 1,
    "firstName": "avi",
    "lastName": "umaha",
    "groupType": "Provider",
```

```
        "groupName": "provider 1",
        "permissionLevel": "Administrator",
        "email": "aviu@mydomain.com",
        "description": "great",
        "forceChangePasswordNextLogin":false,
        "lastLoginStatus": "Success",
        "failLoginAttempts": 0,
        "login": "aviu",
        "group": 1,
        "phone1": "054852188445",
        "phone2": null,
        "lastLogin": "2019-04-28T18:16:04+0000",
        "userBlockTime": null
}
```

### 10.2.3   Get User Information(Self) Example

```
GET redirectapp.audiocodes.com/api/v1/user/me
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
        "id": 1,
        "firstName": "avi",
        "lastName": "umaha",
    "groupType": "Provider",
    "groupName": "provider 1",
    "permissionLevel": "Administrator",
    "email": "aviu@mydomain.com",
    "description": "great",
    "forceChangePasswordNextLogin":false,
    "lastLoginStatus": "Success",
    "failLoginAttempts": 0,
    "login": "aviu",
    "group": 1,
    "phone1": "054852188445",
    "phone2": null,
    "lastLogin": "2019-04-28T18:16:04+0000",
    "userBlockTime": null
}
```

## 10.3    Create a Single User

```
POST redirectapp.audiocodes.com/api/v1/user
```
The following attributes MUST be included:

| Attribute | Type | Description | Required? |
|-----------|------|-------------|-----------|
| firstName | String | Defines the user's first name. | Mandatory |
| lastName | String | Defines the user's last name. | Mandatory |
| password | String | Defines the user's password. | Mandatory |
| permissionLevel | String Enum | Defines the user's permission level:<br>▪ Administrator<br>▪ Operator<br>▪ Monitor | Mandatory |
| email | String | Defines the user's email address. | Optional |
| description | String | Defines additional information about the user. | Optional |
| login | String | Defines the Login name. | Mandatory |
| group | Number | Defines the Group Id. | Mandatory |
| phone1 | String | Defines the user's primary phone number. | Optional |
| phone2 | String | Defines the user's secondary phone number | Optional |
| forceChangePasswordNextLogin | Boolean | Indicates if a user is required to change password on the next login. | Optional |

**Example**:

```
POST redirectapp.audiocodes.com/api/v1/user
Content-Type: application/json
{
        "firstName": "Avi",
        "lastName": "Usher",
    "password":"test1234",
    "permissionLevel": "Administrator",
    "forceChangePasswordNextLogin": false,
    "email": "aviu@mydomain.com",
    "description": "great",
    "login": "aviu",
    "group": 1,
    "phone1": "054852188445",
```

```
    "phone2": "08545421555"

}
```

**Response**

```
HTTP/1.1 201 CREATED
Content-Type: application/json
{
    "id": 1,
    "url": "{URL_PREFIX}/users/1"
}
```

# 10.4 Modify a Single User

```
PUT redirectapp.audiocodes.com/api/v1/users/{id}
```

{id} – id of the requested user

At least one of the following attributes MUST be included:

| Attribute | Type | Description | Required? |
|-----------|------|-------------|-----------|
| **firstName** | String | User first name | Optional |
| **lastName** | String | User last name | Optional |
| **password** | String | User password | Optional |
| **email** | String | User email address | Optional |
| **description** | String | Additional information about the user | Optional |
| **phone1** | String | User primary phone number | Optional |
| **phone2** | String | User secondary phone number | Optional |
| **forceChangePasswordNext Login** | Boolean | Indicates if the user is required to change password on next login. | Optional |

Example:

```
PUT redirectapp.audiocodes.com/api/v1/users/1
Content-Type: application/json
{
    "firstName": "Avi",
        "lastName": "Usher",
    "password":"test1234",
    "forceChangePasswordNextLogin": false,
    "email": "aviu@mydomain.com",
    "description": "great",
    "login": "aviu",
    "phone1": "054852188445",
```

```
    "phone2": null
}
```

**Response**

**HTTP**/1.1 200 OK

**Content-Type:** application/json

## 10.5    Delete a Single User

```
DELETE redirectapp.audiocodes.com/api/v1/users/{id}
Content-Type: application/json
Response
HTTP/1.1 200 OK
Content-Type: application/json
```

{id} – id of the requested user

# 11     Location Actions

The following describes the Location Actions API commands.

## 11.1    Associate Device with Location Action

```
POST
redirectapp.audiocodes.com/api/v1/locations/{id}/devices/associate
Content-Type: application/json
{
    "macList": ["djhfjdkjkk", … ,"1123235544"],
    "overrideCurrentAssociation": true,
    "description": "Israel"
}
Response
HTTP/1.1 200 OK
Content-Type: application/json
{
    "description": "2 out of N devices were associate to
location"
}
```

{id} – id of the requested location to associate with the devices.

The following attributes MUST be included in request body:

| Attribute | Type | Description | Required? |
|---|---|---|---|
| **macList** | Array of strings, max 5000 | ▪ MAC list of devices to associate with location ▪ MAC format: See Section 8.1 on page 25. | Mandatory |
| **overrideCurrentAssociation** | Boolean | Indicates whether or not to override location association if one exists | Mandatory |
| **description** | String | Provides description of devices | Optional |

■ For a successful Response: **200 OK**, body includes a description that must include the number of MACS associated due to this request.

■ **Return 400 Error** in case a MAC in MACList is not defined for the group the location belongs to.

■ For each MAC in MAC list the MAC must be associated with the location if it belongs to the same group.

■ If overrideCurrentAssociation is set to true, then if the MAC is associated with a location it will be overridden with the new location, if set to false only unassociated MACs will be assigned.

■ If description is included it will be added to all devices.

■ In case of error the server must not associate any MAC in the request (all or nothing)

## 11.2    Disassociate Device from Location Action

```
POST
redirectapp.audiocodes.com/api/v1/locations/{id}/devices/disassoci
ate
Content-Type: application/json
{
    "macList": ["djhfjdkjkk", … ,"1123235544"]
}
Response
HTTP/1.1 200 OK
Content-Type: application/json
```

{id} – id of the requested location to disassociate from devices.

MAC format: See Section 8.1 on page 25.

■    For a successful Response: 200 OK, body includes a description that must include the number of MACS disassociated due to this request.

■    Return 400 Error in case a MAC in MACList is not associated with this location.

■    Return 400 Error in case a MAC in MACList is not defined for the group the location belongs to.

■    In case of error the server must not disassociate any MAC in the request (all or nothing).

# 12 Date and Time Format

The following is a list of date and time formats in all JSONs:

yyyy-MM-ddTHH:mm:ssZ


Where:

- yyyy   – refers to the year in 4-digit format
- MM   – refers to the month in 2-digit format
- dd     – refers to the day in 2-digit format
- HH   – refers to hours in 2-digit format
- Mm    – refers to minutes in 2-digit format
- ss     – refers to seconds in 2-digit format
- Z     – refers to the time zone


Examples:

2019-04-28T18:16:04+0000


Date Format Example from RFC 3339 (https://www.ietf.org/rfc/rfc3339.txt):


**1996-12-19T16:39:57-08:00**

This represents 39 minutes and 57 seconds after the 16th hour of December 19th, 1996 with an offset of -08:00 from UTC (Pacific Standard Time). Note that this is equivalent to 1996-12-20T00:39:57Z in UTC.


**1990-12-31T15:59:60-08:00**

This represents the same leap second in Pacific Standard Time, 8 hours behind UTC.


**1937-01-01T12:00:27+00:20**

This represents the same time as noon, January 1, 1937, Netherlands time.  Standard time in the Netherlands is exactly 19 minutes and 32.13 seconds ahead of UTC by law from 1909-05-01 through 1937-06-30. This time zone cannot be represented exactly using the HH:MM format, and this timestamp uses the closest representable UTC offset.

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# 13    REST Response Rules

The following are the Status codes used in the API:

| REST Response | Description |
| --- | --- |
| **200 OK** | Successful request was completed. |
| **201 Created** | As a result of HTTP POST request, one or more new resources have been successfully created on server. |
| **204 No Content** | Successful request which results in no content. |
| **400 Bad Request** | The JSON or URI formats are invalid in some way according to the API specification. |
| **401 Unauthorized** | Returned if the username or password is not correct. |
| **403 Forbidden** | Returned if the user has no privileges to execute this request. |
| **404 Not Found** | Returned upon incorrect URL. |
| **409 Conflict** | Returned upon conflict of the request. |
| **5xx Response** | Returned if there is a server-side error. |

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