avi-on Cloud Platform Public API User Guide
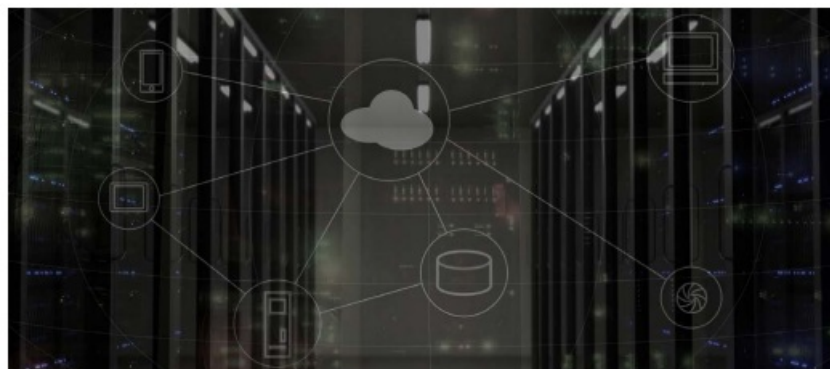
Contents

avi-on Cloud Platform Public API

Information

- Product information is subject to change without notice. Check the Avi-on support website for the latest information.
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- All trademarks are recognized as the property of their respective owners.
- To ensure optimal reliability and to meet warranty requirements, Avi-on products must be installed according to the instructions in this manual.

Audience

This manual is intended for use by skilled professional installation and maintenance personnel. Safety and shock hazards may be present during installation.

Overview

- This API is designed for application developers to access the platform via our cloud API to create mobile or web applications that connect through the Avi-on cloud service to operate devices within Avi-on Networks. The API also allows discovery of the devices, groups, and scenes to control, as well as the current status of devices.
- For the API to work, the user must have a Remote Access Bridge configured and online to connect their local Mesh network to the Avi-on cloud service.
- The key elements of the API include authentication and session token management, get account status information, get device configuration and available features, and post new states to devices, groups or scenes for dimming and color changing.
- The present release does not support the creation or modification of groups, schedules or scenes via the API. In many cases complex logic is required to assure changes are properly synchronized across all impacted devices. These should be set up using the Avi-on app, and then they can be operated via the API.
- To access the API, the remote system must independently have the current avi-on user email and password for each user account to be accessed. Other integrations, such as OATH2 are possible as a services engagement with Avi-on.
- Please contact Avi-on for licensing terms and services support cost and scope for a production integration.
- Public API includes every endpoint accessible to Users with role End User. The following instructions describe how to to authenticate a user created through the Avi-on app (or third party apps using our APIs) and consume the set of APIs defined as Public for third party developers.

Support

Support is available to Avi-on device licensees on a professional services basis. Contact support@avi-on.com for a customized support quote bas on your needs.

Authentication

- Avi-on use based on HTTP Basic Authentication strategy to enforce access control to our API. The creation of a Session Token is done with a POST (only supported by HTTPS) with 0the email and password in the body as JSON. We don't support sending this information in other formats.
- If the information provided (email and password) is correct, the API respond with a Token and a Refresh Token to be use in following requests in the header: Authorization: Token <Token>. The expiration time of the token

for the API is one week and the refresh token one month.

Create Session Token

- If the information provided (email and password) is correct, the API respond with a Token and a Refresh Token to be use in following requests in the header: Authorization: Token <Token>. The expiration time of the token for the API is one week and the refresh token one month.
- First step to use the Public API is to create an authorization token with the username and password.
- POST **http://api.avi-on.com/sessions**

Payload (JSON

Name	Type	Description
email	User's email	string
string	password	User's password

Headers:

Name	Value
Content-Type	application/json

Response:

Name	Type	Description
auth_token	String	Token for authentication
capabilities*	Array	List of capabilities
email_verified	Boolean	Email verification
phone_verified	Boolean	Phone verification
refresh_token**	String	Token to get new token when auth_token expires
expiration_date	Date/Time	Time after the auth_token requires refresh

Response (Code 201):

Inside credential attribute. Ignore the rest of the response. It's for internal use.

Name	Type	Description
auth_token	String	Token for authentication
capabilities*	Array	List of capabilities
email_verified	Boolean	Email verification
phone_verified	Boolean	Phone verification
refresh_token**	String	Token to get new token when auth_token expires
expiration_date	Date	Date/Time when the Token requires refresh

Errors:

Code	Response	Reason
401	{"error":{"auth":["Incorrect Email or Password."]}}	Self descriptive. Credentials are wrong.
401	{"error":{"credentials":["Missing credentials"]}}	The data was sent (check the Content-Type).

Example:
curl -X POST http://api.avi-on.com/user/devices -H "Content-Type: application/json" -d
"{\"email\":\"user@domain.com\",\"password\":\"password\"}"

Code 201

```
{
  "credentials":{
    "auth_token":"522ddf85b2f0affdd08a71e2268079e3",
    "email_verified":false,
    "phone_verified":false,
    "refresh_token":"88f82a68ea54d82a433091f5f62fe655",
    "expiration_date":"2017-09-09T18:39:50+00:00",
    "role":"test",
    "role_list":[
        "user"
    ],
    "vendor_list":[],
    "capabilities":[
      "TEACHING",
      "TRIGGERS",
      "UPGRADING",
      "CLAIMING",
      "DEVICE_EDITING",
      "SCHEDULING"
    ]
  }
}
```

Refresh Session Token
To refresh the token once expired. It's the same endpoint but must include an Authorization header with the refresh token as value. See Headers below: PUT **http://api.avi-on.com/sessions**

Headers:

Name	Value
Content-Type	application/json
Authorization	RefreshToken <token>

Response:
The same as Create Session Token.

Errors:

Code	Response	Reason
401	{"error":{"auth":["Inco{"error":{"refresh_token":["Invalid Refresh Token"]}} rrect Email or Password."]}}	The refresh token is wrong
401	{"error":{"credentials":["Missing credentials"]}}{"error":{"credentials":["Missing credentials"]}}	Refresh Token is missing

Example:

```
curl -X PUT http://api.avi-on.com/sessions -H "Content-Type: application/json" -H
"Authorization: RefreshToken <RefreshToken>"
```

```json
{
  "credentials":{
    "auth_token":"522ddf85b2f0affdd08a71e2268079e3",
    "email_verified":false,
    "phone_verified":false,
    "refresh_token":"88f82a68ea54d82a433091f5f62fe655",
    "expiration_date":"2017-09-09T18:39:50+00:00",
    "role":"test",
    "role_list":[
        "user"
    ],
    "vendor_list":[],
    "capabilities":[
      "TEACHING",
      "TRIGGERS",
      "UPGRADING",
      "CLAIMING",
      "DEVICE_EDITING",
      "SCHEDULING"
    ]
  }
}
```

User's Devices API

The purpose of this is to identify the current state of the device (not groups or scenes at this time). This includes:

- Current Dim level
- Current Color temperature (Kelvin)
- Active scenes
- Device Name and capabilities

Get Device State
GET http://api.avi-on.com/user/devices

Headers:

Name	Value
Content-Type	application/json
Authorization	Token <token>

Errors:

Code	Response	Reason
401	{"error":{"auth_token":["Invalid Token"]}}	The token is not longer valid
401	{"error":{"credentials":["Missing credentials"]}}	Refresh Token is missing

Response (Code 200):

```
curl -X GET http://api.avi-on.com/user/devices -H "Content-Type: application/json"
-H "Authorization: Token <Token>"
```

```
{
    "devices" :[
        {
            "last_active_at" : "2017-09-07T16:45:01+00:00",
            "id" : 32646,
            "name" : "Dino",
            "product_id" : 26,
            "avid" : 19,
            "mac_address" : "63f3d8a16472",
            "pid" : "63f3d8a16472",

"thumbnail" : "https://s3-us-west-2.amazonaws.com/api-qa.avi-on.com/location/3855/
devices/ 15ab08d9e82664fb42b33d79586368e3",
            "current_version" : "1.10.2",
            "type" : "device",
            "favorite" : 0,
            "versions" :[
            "1.10.2"

                    ],

            "created_at" : "2017-06-19T14:41:08+00:00",
            "updated_at" : "2017-07-04T19:00:15+00:00",
            "location_id" : 3855,
            "product" :{
                "id" : 26,
                "name" : "RGB Demo 08-02",
                "product_code" : 2,
                "vendor_id" : 15,
                "deprecated" : false,
                "micro_controllers" : 1,
                "features" :[

                        "TEMP",
                        "WHITE",
```

```
                                    "RGB",
                                    "GROUPING_V2",
                                    "SCENES",
                                    "SCHEDULING_V2",
                                    "SCHEDULING",
                                    "GROUPING",
                                    "POWER_CYCLE_OTA",
                                    "ON_OFF",
                                    "DIM",
                                    "CLOCK"

                                ],

                    "vendor_code" : 8,
                    "vendor_name" : "TOSPO",

    "thumbnail" : "https://s3-us-west-2.amazonaws.com/api-qa.avi-on.com/vendors/
    b43817453f3814 0746b36123b9263f4c.jpg",
                    "firmware" :{ }

                },

            "reachable" : true
                            }

        ],
        "groups" :[


        {
          "id" : 977,
          "name" : "Test",
          "location_id" : 3855,
          "thumbnail" : "",
          "pid" : "1eeaae19e2cfd75e9755aff2",
          "avid" : 256,
          "favorite" : 0,
          "created_at" : "2017-07-04T18:51:18+00:00",
          "updated_at" : "2017-07-04T18:58:20+00:00"

        }


        ],
        "scenes" :[


        {
          "id" : 661,
          "avid" : 1,
          "location_id" : 3855,
          "name" : "Home",
          "thumbnail" : null,
          "favorite" : 0,
          "start_mode" : "off",
          "duration" : 10,
          "target_scene_id" : null, "transition_active" : false,
          "pid" : "661",
          "created_at" : "2017-07-04T17:42:21+00:00",
          "updated_at" : "2017-07-04T19:00:11+00:00"

        }
    ]


}
```

State API

Get States
GET **http://api.avi-on.com/<operable>/<pid>/state**

Parameters:

Name	Value
operable	Oneoperablefrom:device, grouporscene
pid	Public ID

Headers:

Name	Value
Content-Type	application/json
Authorization	Token <token>

Response (Code 200):

Field	Description
name	Standard name of the stateful feature
value	Current value in internal protocol format
humanized	The value in human readable format

Errors:

Code	Response	Reason
401	{"error":{"auth_token":["Invalid Token"]}}	The token is not longer valid
401	{"error":{"credentials":["Missing credentials"]}}	RefreshToken is missing
403	{"error":{"authorization":["Forbidden access"]}}	Unauthorized access to an operable
404	{"error":"<Operable> not found"}%	The PID provided is not present in the database

Example:

```
curl -X GET http://api.avi-on.com/devices/63f3d8a16472/state -H "Content-Type:
application/json" -H "Authorization: Token <Token>"
```

```
{
        "state" :[

        {
                "humanized" : "on",
                "name" : 76405,
                "id" : 76405,
                "value" : "[1]",
                "operable" : "device",
                "operable_id" : 32646,
                "updated_at" : "2017-07-04T19:00:15+00:00"

        },
        {
                "humanized" : "4438",
                "name" : "white",
                "id" : 76407,
                "value" : "[1,17,86,1]",
                "operable" : "device",
                "operable_id" : 32646,
                "updated_at" : "2017-07-04T18:51:38+00:00"

        },
        {
                "humanized" : "[255,0,4]",
                "name" : "rgb",
                "id" : 76406,
                "value" : "[0,255,0,4,1]",
                "operable" : "device",
                "operable_id" : 32646,
                "updated_at" : "2017-07-04T18:58:23+00:00"

        },
        {
                "humanized" : "100%",
                "name" : "dim",
                "id" : 76404,
                "value" : "[255]",
                "operable" : "device",
                "operable_id" : 32646,
                "updated_at" : "2017-07-04T19:00:15+00:00"

        }
    ]
}
```

Update States

POST **http://api.avi-on.com/<operable>/<pid>/state**

Perameters:

Name	Value
operable	Oneoperablefrom:device, grouporscene
pid	Public ID

Payload (JSON): State

Name	Type	Description
email	String	Standard name of the stateful feature
value*	String	New Value in JSON

* See more information about valid values for properties below.

Headers:

Name	Value
Content-Type	application/json
Authorization	Token <token>

Response (Code 200):

Field	Description
name	Standard name of the stateful feature
value	Current value in internal protocol format
humanized	The value in human readable format

Errors:

Code	Response	Reason
401	{"error":{"auth_token":["Invalid Token"]}}	The token is not longer valid
401	{"error":{"credentials":["Missing credentials"]}}	RefreshToken is missing
403	{"error":{"authorization":["Forbidden access"]}}	Unauthorized access to an operable
404	{"error":"<Operable> not found"}%	The PID provided is not present in the database
404	{"error":"Property not found"}%	The feature name is not present in the operable

Response (Code 200):

Field	Description
name	Standard name of the stateful feature
value	Current value in internal protocol format
humanized	The value in human readable format

Example:

```
curl -X POST http://api.avi-on.com/devices/63f3d8a16472/state -H "Content-Type:
application/json" -H "Authorization: Token <Token>" -d "{\"state\":{\"feature\":\"dim\",
\"value\":\"100%\"}}"
```

```
{
    "state":

    {
        "humanized" : "100%",
        "name" : "dim",
        "id" : 76405,
        "value" : "[255]",
        "operable" : "device",
        "operable_id" : 32646,
        "updated_at" : "2017-07-04T19:00:15+00:00"

    }
}
```

Featured Value Format:

Code	Response	Reason
on_off	String in lowercase (on,off) or in integer (1,0)	"on", "off", "1", "0"
dim	Percentage between 0-100% or between 0-255. Also supports delta incrementals.	"100%" (full dimming) or "0" (off). "+10%", "-25%"
white	Kelvins between 1500-7000. Also supports delta incrementals.	"2200" (warm), "5500" (daylight). "-25%" (warmer), "+25%" (cooler)
rgb	[Red,Green,Blue]	"[255,0,0]" (for Red)
action	Only feature for scenes. Idem as on_off.	"on", "off", "1", "0"

Analytics

This set of endpoints is available to provide historical information for devices under each location. We gather energy consumption and dimming events which can then be reported via the following.

Get Energy Consumption

GET http://api.avi-on.com/locations/{{location_pid}}/energy?
pids=60d4d8a06472,27460a8d4d06&type=device&from=2019-04-01&to=2019-04-07
Can be queried for both groups or sets of devices. Group query supports a single group on each request, whereas queries for devices support a set of devices. You will need to specify the type of request (device or group), start and end dates for the report (inclusive) and the set of pids for the required entities.

Will return a list of devices or groups with a set of pairs timestamp

Headers:

Name	Value
Content-Type	application/json
Authorization	Token <token>

Parameters:

Name	Value	Description
pid	60d4d8a06472,27460a8d4d06	Required – comma separated list of device pids, or a single group pid.
type	device	Required – one of, "device" or "group" to collect data for a set of devices or a group.
from	2019-04-01	Required – YYYY-MM-DD start date for the report.
to	2019-04-07	Required – YYYY-MM-DD end date for the report.

Example:

```
Get Energy Consumption
curl --location --request GET "api.avi-on.com/locations/{{location_pid}}/energy?
pids=60d4d8a06472,27460a8d4d06&type=device&from=2019-04-01&to=2019-04-07" \
  --header "Authorization: Token " \
  --header "Content-Type: application/json"
```

Get Events for devices in location

GET http://api.avi-on.com/locations/{{location_pid}}/events?
pids=60d4d8a06472,27460a8d4d06&type=device&from=2019-04-01&to=2019-04-07&feature=dim
Can be queried for both groups or sets of devices. Group query supports a single group on each request, whereas queries for devices support a set of devices. You will need to specify the type of request (device or group), start and end dates for the report (inclusive) and the set of pids for the required entities.

Will return a list of devices or groups with a set of pairs timestamp

Headers:

Name	Value
Content-Type	application/json
Authorization	Token <token>

Parameters:

Name	Value	Description
pid	60d4d8a06472,27460a8d4d06	Required – comma separated list of device pids, or a single group pid.
type	device	Required – one of, "device" or "group" to collect data for a set of devices or a group.
from	2019-04-01	Required – YYYY-MM-DD start date for the report.
to	2019-04-07	Required – YYYY-MM-DD end date for the report.
feature	dim	

Example:

```
Get Events for devices in location
curl --location --request GET "api.avi-on.com/locations/{{location_pid}}/events?
pids=60d4d8a06472,27460a8d4d06&type=device&from=2019-04-01&to=2019-04-07&feature=dim" \
   --header "Authorization: Token " \
   --header "Content-Type: application/json"
```

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Documents / Resources

avi-on Cloud Platform Public API [pdf] User Guide
Cloud Platform Public API, Platform Public API, Public API

References

- ⊕ api.avi-on.com/