Introduction

The Workspace ONE Intelligence API documentation describes how to query and extract data for use in other business intelligence tools. It also helps with building General Data Protection Regulation (GDPR) compliant tools and applications with REST APIs.
Intended Audience

This content is intended for experienced developers who are familiar with Workspace ONE Intelligence data and controls.

Terms

Workspace ONE UEM: The name of the product formerly known as AirWatch.

API Concepts

Host Names

Examples in this document refer to the host https://api.sandbox.data.vmwservices.com. As a customer you will need to substitute the host name specific to the region in which your data resides. For a list of the regions and endpoints, access URLs to Whitelist for On-Premises by Region.

HTTP Methods

GET: Used to request a single, specific entity/object.

POST: Used to submit a request that requires a JSON body. The JSON body can provide information used to create a new object (for example, Create Report API) or it can provide information used to control the result set of a query (for example, pagination, search).

Path Parameters

When a URL requires path parameters, those parameters are denoted with curly braces. For example:

<table>
<thead>
<tr>
<th>URL</th>
<th>Path Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://api.sandbox.data.vmwservices.com/v1/reports/%7Ba%7D">https://api.sandbox.data.vmwservices.com/v1/reports/{a}</a></td>
<td>{a}</td>
</tr>
</tbody>
</table>

Data Formats

Any HTTP Request Body must be submitted as JSON. The following HTTP header must be included with such requests:

<table>
<thead>
<tr>
<th>Header Name</th>
<th>Header Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content-Type</td>
<td>application/json</td>
</tr>
</tbody>
</table>

Data returned from the WS1 Intelligence APIs is likewise returned as JSON. A client should always indicate its ability to process JSON in any request:

<table>
<thead>
<tr>
<th>Header Name</th>
<th>Header Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept</td>
<td>application/json OR <em>/</em></td>
</tr>
</tbody>
</table>

Paging

API requests that return more than a single object are always paged. Paging is controlled with 2 parameters:
<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Parameter Description</th>
<th>Min</th>
<th>Max</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>page_size</td>
<td>The number of records to return.</td>
<td>1</td>
<td>1000</td>
<td>100</td>
</tr>
<tr>
<td>offset</td>
<td>Offset across the entire data set at which the current page starts.</td>
<td>0</td>
<td>&lt;any&gt;</td>
<td>0</td>
</tr>
</tbody>
</table>

**Example Request Body (default sort)**

```json
{
    "offset": 2000,
    "page_size": 100
}
```

Paging requires the data set to be sorted. Each dataset has a default sort order, but that can be controlled by specifying “sort_ons”, which consist of 2 parameters:

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Parameter Description</th>
<th>Default Value (for reports)</th>
</tr>
</thead>
<tbody>
<tr>
<td>field</td>
<td>The field to sort on.</td>
<td>name</td>
</tr>
<tr>
<td>order</td>
<td>The sort order (ASC or DESC)</td>
<td>ASC</td>
</tr>
</tbody>
</table>

**Example Request Body (custom sort)**

```json
{
    "offset": 200,
    "page_size": 1000,
    "sort_ons": [
        {
            "field": "device_enrollment_user_first_name",
            "order": "DESC"
        }
    ]
}
```

**Authentication**

API calls to WS1 Intelligence are always authenticated using a JSON Web Token (JWT). JWT tokens are submitted as Bearer tokens in an HTTP Authorization header.

<table>
<thead>
<tr>
<th>Header Name</th>
<th>Header Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Bearer &lt;jwt-token&gt;</td>
</tr>
</tbody>
</table>


The site [https://jwt.io/](https://jwt.io/) is a helpful tool for parsing JSON Web Tokens.

If access tokens are expired or invalid, the API invoked returns an HTTP status 401 (Unauthorized).
API Error Handling

Input errors always generate an HTTP BAD Request (status 400) along with a JSON body that provides further details about the error. For example:

```json
{
    "errors" : [ { 
        "code" : "FIELD-VALIDATION",
        "message" : "Invalid value [DES]. Must be one of [asc, desc].",
        "violated_property" : "sort_ons[0].order"
    } ]
}
```

Errors is an array with the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>The error code indicating the type of error.</td>
</tr>
<tr>
<td>message</td>
<td>More information about the specific error</td>
</tr>
<tr>
<td>violated_property</td>
<td>A specific property name (if applicable)</td>
</tr>
</tbody>
</table>

Messages that cannot be parsed, often because they have invalid (unsupported) fields, return an error as follows:

```json
{
    "errors" : [ { 
        "code" : "UNPARSEABLE-MESSAGE",
        "message" : ""
    } ]
}
```

 Requests that result in constraint violations (for example, 2 reports with the same name) return errors as follows:

```json
{
    "errors" : [ { 
        "code" : "DUPLICATE-KEY",
        "message" : ""
    } ]
}
```

Other standard errors include:

<table>
<thead>
<tr>
<th>HTTP Status Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>Authentication failed. Likely your access-token needs to be renewed.</td>
</tr>
<tr>
<td>403</td>
<td>Authorization failed. You attempted to access a resource or perform an operation that you are not permitted to do.</td>
</tr>
<tr>
<td>404</td>
<td>The resource you attempted to access does not exist.</td>
</tr>
<tr>
<td>429</td>
<td>Rate limit exceeded.</td>
</tr>
</tbody>
</table>
Credentials for API Access

Configure a Service Account

A service account provides you with a clientId and clientSecret that can be used to obtain a JSON Web Token for calling WS1 Intelligence APIs.

1. In the WS1 Intelligence UI, go to Settings Service Accounts.
2. Create a service account.
3. The browser downloads a JSON credentials file with the credential.

Example Credentials File

```
{
   "name": "reportscript",
   "tokenEndpoint": "https://api.staging.dpa0.org/auth/console/token",
   "clientId": "reportscript@538f619e-2db4-4f07-974b-efb3e5326116.data.vmwservices.com",
   "clientSecret": "5b3b835b2adedd28b1862b3bb714e48f03423010903f2ec7159031ba1995ad0e",
   "authorizedGrantType": ["CLIENT_CREDENTIALS"],
   "resourceIds": ["api.data.vmwservices.com"]
}
```

- The clientSecret is a password and must be protected.
- After creating the service account, you cannot retrieve the clientSecret again. You may generate a new clientSecret, but this replaces (invalidates) the original clientSecret.

Obtain an Access Token

Example Request

POST https://auth.sandbox.data.vmwservices.com/oauth/token?grant_type=client_credentials

<table>
<thead>
<tr>
<th>Header Name</th>
<th>Header Value</th>
<th>Notes</th>
<th>Example Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Basic &lt;Base64 encoded username:password&gt;</td>
<td>The username is the clientId. The password is the clientSecret.</td>
<td><code>Basic cmVwb3J0c2NyaxB0QDUzOOGy2MT11LTJyQtNGYwNyO5NzRiLWVMyjN1NTMyNjExNl5kYXRhLztd3b</code></td>
</tr>
</tbody>
</table>

Notice the "auth" prefix on the URI. All other APIs are accessed with an "api" prefix. Only the token endpoint uses the "auth" prefix.
The access_token in the response can be used to call WS1 Intelligence APIs.
Structure of Data

Data is organized in a 3-level hierarchy: / Integration / Entity of Event Type / Attribute.

<table>
<thead>
<tr>
<th>Integration</th>
<th>Example (1)</th>
<th>Example (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration</td>
<td>Usually the name of the vendor or product that is sourcing the data.</td>
<td>airwatch</td>
</tr>
<tr>
<td>Entity or Event Type</td>
<td>An <strong>Entity</strong> would be an object for which the system tracks attributes over time. For example, device and users would be entities. An <strong>Event Type</strong> is an event that occurs at a point in time. For example, an app launch or a notification from a security vendor would both be events.</td>
<td>device</td>
</tr>
<tr>
<td>Attribute</td>
<td>An <strong>Attribute</strong> is a key-value pair associated with an entity or an event type. For example, a &quot;Device Friendly Name&quot; could be an attribute of a device.</td>
<td>device_friendly_name</td>
</tr>
</tbody>
</table>

For reporting, the following integration/entity combinations are available:

<table>
<thead>
<tr>
<th>Category (as seen in the WS1 Intelligence UI)</th>
<th>Integration</th>
<th>Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apps</td>
<td>airwatch</td>
<td>application</td>
</tr>
<tr>
<td>Devices</td>
<td>airwatch</td>
<td>device</td>
</tr>
<tr>
<td>OS Updates</td>
<td>airwatch</td>
<td>windowspatch</td>
</tr>
<tr>
<td>Device Sensors</td>
<td>airwatch</td>
<td>devicesensors</td>
</tr>
</tbody>
</table>

Report Metadata API

A meta-data API is available to show which attributes are available for a particular entity. The general form of this query is:


The following example shows how to retrieve attribute information for integration **airwatch** and entity **device**.

Example Request

GET https://api.sandbox.data.vmwservices.com/v1/meta/integration/airwatch/entity/device/attributes
Example Response

```
200 OK
{
   "data": [
   {
      "classifications": [
      {
         "label": "Device",
         "name": "DEVICE"
      }
   ],
   "custom": false,
   "data_type": "BOOLEAN",
   "description": "Personal Hotspot Enabled",
   "description_available": false,
   "entity": "device",
   "groups": [
      {
         "description": "Status of a device",
         "id": "a16e37d7-5a96-4236-8787-7ab9b177cf4b",
         "label": "Device Status",
         "name": "device_status"
      },
      {
         "description": "Attributes of a device",
         "id": "1e56f89a-12eb-41c6-a6a6-a96808275951",
         "label": "Device Attributes",
         "name": "device_attributes"
      }
   ],
   "integration": "airwatch",
   "label": "Personal Hotspot Enabled",
   "name": "device_personal_hotspot_enabled",
   "presentation_type": "RADIO",
   "suggestion_supported": false,
   "supported_operators": [
      {
         "description": "Equals",
         "label": "Equals",
         "name": "EQUALS",
         "single": true,
         "value": "="
      }
   }
   ]
]
< RESULTS TRUNCATED FOR READABILITY >
```
Create Report API

Report creation requires the following information get encoded in a JSON request body:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value (see example below)</th>
<th>Description</th>
<th>Required/Optional</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>BK - API Test1 - Enrolled Devices</td>
<td>Free-form text string naming the report. It must be unique within the context of a customer.</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>description</td>
<td>All enrolled devices with details</td>
<td>Free-form text string describing the report.</td>
<td>optional</td>
<td>&lt;empty&gt;</td>
</tr>
<tr>
<td>integration</td>
<td>airwatch</td>
<td>Identifies the integration from which the data will be sourced.</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>entity</td>
<td>device</td>
<td>Identifies the entity from which the data will be sourced.</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>column_names</td>
<td>Any array of column names</td>
<td>Indicates which attributes of /airwatch/device will appear in the report.</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>filter</td>
<td>A filter expression</td>
<td>Selects which devices will appear in this report. In this case, the filter specified &quot;Enrolled&quot; devices.</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>recipients</td>
<td>An array of email address objects</td>
<td>Indicates who should receive the output of the report.</td>
<td>optional</td>
<td>&lt;empty&gt;</td>
</tr>
</tbody>
</table>

Example Request

POST https://api.sandbox.data.vmwservices.com/v1/reports

JSON body:
{  "column_names": [    "device_last_seen",    "device_friendly_name",    "device_corp LIABLE",    "device_enrollment_user_name",    "device_enrollment_user_first_name",    "device_enrollment_user_last_name",    "device_enrollment_user_email",    "device_platform",    "device_os_version",    "device_model_name"  ],  "description": "All enrolled devices with details",  "entity": "device",  "filter": " device_enrollment_status = 'Enrolled' ",  "integration": "airwatch",  "name": "BK - API Test1 - Enrolled Devices",  "recipients": [    {      "email": "Margaret.thatcher@vmware.com"    }  ]}
Example Response
201 CREATED
{
    "data": {
        "column_names": [
            "device_last_seen",
            "device_friendly_name",
            "device_corp_liable",
            "device_enrollment_user_name",
            "device_enrollment_user_first_name",
            "device_enrollment_user_last_name",
            "device_enrollment_user_email",
            "device_platform",
            "device_os_version",
            "device_model_name"
        ],
        "created_at": "2019-06-03T17:13:07.440Z",
        "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
        "description": "All enrolled devices with details",
        "entity": "device",
        "entity_label": "Devices",
        "filter": "device_enrollment_status = 'Enrolled'",
        "filter_condition": {
            "attribute": "device_enrollment_status",
            "custom_attribute": false,
            "operand_collection_present": false,
            "operands": [
                {
                    "data_type": "STRING",
                    "operand_type": "BasicOperand",
                    "value": "Enrolled"
                }
            ],
            "operator": ":",
            "parenthesized": false
        },
        "id": "5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116",
        "integration": "airwatch",
        "modified_at": "2019-06-03T17:13:07.440Z",
        "name": "BK - API Test1 - Enrolled Devices",
        "recipients": [
            {
                "created_at": "2019-06-03T17:13:07.440Z",
                "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
                "email": "Margaret.thatcher@vmware.com"
            }
        ],
        "total_downloads": 0,
        "total_schedules": 0
    }
}
The important part of the JSON response is the "ID" returned by the system.
"5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116"

This report identifier is used in subsequent API calls to setup schedules, run the report, and download the results.

Once a report has been created, there are 2 facilities available for running the report. You may run the report any time by calling the "run report" API. You may also schedule the report to execute periodically.

Run Report API

Example Request

Note that the report identifier obtained via the "create report API" (see above) is used in this API call to run the report.

POST https://api.sandbox.data.vmwservices.com/v1/reports/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/run

Example Response

```json
{
   "data": {
      "active": true,
      "created_at": "2019-06-03T17:28:24.554Z",
      "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
      "cron_expression_detail": {
         "frequency": "ONCE"
      },
      "id": "749b30e0-6e75-4d58-ba90-3e175e2b8b8e",
      "modified_at": "2019-06-03T17:28:24.554Z",
      "modified_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
      "name": "Single run report request 5f5abb88-ea63-43bf-8738-ed0c6a7b345a",
      "report_id": "5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116",
      "schedule_type": "ADHOC",
      "start": "2019-06-03T17:28:24.553Z"
   }
}
```

The ID returned in the JSON response ("749b30e0-6e75-4d58-ba90-3e175e2b8b8e") is the internal report schedule ID. This identifier is not referenced further in this document.

Schedule Report API

Report Schedule creation requires the following information get encoded in a JSON request body:
### Field | Value (see example below) | Description | Required | Default Value
--- | --- | --- | --- | ---
name | Schedule Test Hourly | The schedule name | yes | 
report_id | 5f2c2fa1-e9ec-4c55-9649-b3fbaf4d116 | The report ID returned by the Create Report API | yes | 
schedule_type | CRON | CRON (meaning scheduled) | yes | 
start | 2019-06-03T19:00:00.000Z | The time at which the schedule takes effect (maybe be in the future) | yes | 
cron_expression_details | \{ "frequency": "HOURLY", "hourly": { "interval": 4 } \} | Specifies that the report should be run every 4 hours | yes | 

**Example Request**

```
POST https://api.sandbox.data.vmwservices.com/v1/reports/schedules

\{
    "cron_expression_detail": \{
        "frequency": "HOURLY",
        "hourly": {  "interval": 4
    }  
},
    "name": "Schedule Test Hourly",
    "report_id": "5f2c2fa1-e9ec-4c55-9649-b3fbaf4d116",
    "schedule_type": "CRON",
    "start": "2019-06-03T19:00:00.000Z"
```
```
### Example Response

```json
{
   "data": {
       "active": true,
       "created_at": "2019-06-03T18:24:56.199Z",
       "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
       "cron_expression_detail": {
           "frequency": "HOURLY",
           "hourly": {
               "interval": 4
           }
       },
       "id": "5a384bd7-9ac4-46bb-a810-59e0b498d99f",
       "modified_at": "2019-06-03T18:24:56.199Z",
       "modified_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
       "name": "Schedule Test Hourly",
       "report_id": "5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116",
       "schedule_type": "CRON",
       "start": "2019-06-03T19:00:00.000Z"
   }
}
```

### Additional Scheduling Options

The example above shows **hourly** scheduling. The following enumerates the complete list of cron expressions supported:

<table>
<thead>
<tr>
<th>Desired Frequency</th>
<th>frequency</th>
<th>JSON format</th>
</tr>
</thead>
</table>
| Only once         | ONCE      | "cron_expression_detail" : {
                         |            |   "frequency" : "ONCE" |
|                   |           | }            |
| Each hour         | HOUR      | "cron_expression_detail": {
                         |            |   "frequency" : "HOURLY",
                         |            |   "hourly": {
                         |            |     "interval": 4
                         |            | }            |
| Each day          | DAILY     | "cron_expression_detail": {
                         |            |   "frequency" : "DAILY",
                         |            |   "hour": 17,
                         |            |   "minute": 15
                         |            | }            |
Available Downloads API

When data from your report execution is available, it displays as an available download in the available downloads API.

POST https://api.sandbox.data.vmwservices.com/v1/reports/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/downloads/search

JSON Request Body

```json
{
    "offset": 0,
    "page_size": 100
}
```

The JSON body can be unspecified ({}). This defaults the paging parameters to page_size: 100 and offset:0. The value of these parameters are reflected back in the JSON response below.
The JSON body provides "report tracking" identifiers for 2 different data sets that are available for download (both have a status "COMPLETED"):

- "id": "416c1890-70d5-4261-a440-d2dc402e52cf"
- "id": "397e00fb-5c32-439d-b4fc-a657458c9f6d"

These identifiers can now be used to download the contents of this run of the report, now or at any other point in the future.
Download Report API

Using the report tracking identifiers from the previous step, we can now download the data associated with our report. This is a 2-step sequence:

1. Get a URL to the actual location of the report output.
2. Download the report data from that location.

Get the Location of the Report Output

Example Request

GET
https://api.sandbox.data.vmwservices.com/v1/reports/tracking/416c1890-70d5-4261-a440-d2dc402e52cf/download

Example Response

302 FOUND
date: Mon, 03 Jun 2019 17:52:20 GMT
content-length: 0
location:
https://storage.staging.dpa0.org/reports/538f619e-2db4-4f07-974b-efb3e5326116/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/BK---API-Test1---Enrolled-Devices-2019-06-03-17-28-UTC.csv?Expires=1559587940&Signature=We7nU12zQyNZVdvDSd y6ECfA4bT-eY0No7Z4n5qz8nnPJuRfrN8JfuLWHwzuayY3qt-g0Bw-yEhFZsXfPUUYEur-sa6JZTtL2ZLSc3Vj4RmaxHCTD4EF-hWbPOL7S8XQoXyM KR-FTjqS7P80WE0jDpeaFEPZjSLXWXBAx161nhhKpRzbkb1WGe51bUS19MVdmOyHrMnHe0PT1T7xgYEYCeF4tTYYFNpY2wvXTorXN8KI Q90a8EBtxnyhdrZM2-6PM49PC0lohoM4jw3BoUx7lpeNkgjMxtxIXYMb2Ah4E-TC1GmpbHj2p0wopxrNALf8RXT4o5oRsKiSt9jg__&Key-Pair-Id=APKAJP65P5AIT76C66HUQ

The response is an HTTP redirect to a secure URL where the report contents can be downloaded.

Download the Report Output

Example Request (following the redirect)

GET https://storage.staging.dpa0.org/reports/538f619e-2db4-4f07-974b-efb3e5326116/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/BK---API-Test1---Enrolled-Devices-2019-06-03-17-28-UTC.csv?Expires=1559587940&Signature=We7nU129zQyNZVdvDSd y6ECfA4bT-eY0No7Z4n5qz8nnPJuRfrN8JfuLWHwzuayY3qt-g0Bw-yEhFZsXfPUUYEur-sa6JZTtL2ZLSc3Vj4RmaxHC TD4EF-hWbPOL7S8XQoXyM KR-FTjqS7P80WE0jDpeaFEPZjSLXWXBAx161nhhKpRzbkb1WGe51bUS19MVdmOyHrMnHe0PT1T7xgYEYCeF4tTYYFNpY2wvXTorXN8KI Q90a8EBtxnyhdrZM2-6PM49PC0lohoM4jw3BoUx7lpeNkgjMxtxIXYMb2Ah4E-TC1GmpbHj2p0wopxrNALf8RXT4o5oRsKiSt9jg__&Key-Pair-Id=APKAJP65P5AIT76C66HUQ
Example Response

200 OK
content-type: application/octet-stream
content-length: 463736
...

device_last_seen_utc,device_friendly_name,device_corp_liable,device_enrollment_user_name,device_enrollment_user_first_name,device_enrollment_user_last_name,device_enrollment_user_email,device_platform,device_os_version,device_model_name
"2019-05-04-17:40:30 UTC","VELMA's iPad Pro",CorporateDedicated,ws1intel.12983,VELMA,Bvworks,"ws1intel.12983@ws1.intelligent.staging.dpa0.org",Apple,8.4.1,"iPhone SE"
"2019-05-31-13:10:33 UTC","INGER's iPhone 7 Plus",CorporateDedicated,ws1intel.1488,INGER,Becquart,"ws1intel.1488@ws1.intelligent.staging.dpa0.org",Apple,9.0.2,"iPad Air 2"
"2019-04-29-22:36:32 UTC","KRISTEEN's iPhone 6S",CorporateDedicated,ws1intel.13390,KRISTEEN,Dayberry,"ws1intel.13390@ws1.intelligent.staging.dpa0.org",Apple,9.3.2,"iPad Air"
...

Report Preview API

For small searches for targeted data, the report preview API can be used to extract data. This API returns no more than 1000 results. Calling it repeatedly is discouraged and you will likely exceed the rate limits for your organization.

Example Request

POST https://api.sandbox.data.vmwservices.com/v1/reports/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/preview

JSON Request Body:

```json
{
    "offset": 0,
    "page_size": 3,
    "sort_ons": [
        {
            "field": "device_enrollment_user_first_name",
            "order": "DESC"
        }
    ]
}
```
Example Response

200 OK
{
  "data": {
    "offset": 0,
    "page_size": 3,
    "results": [
      {
        "device_corp_liable": "Undefined",
        "device_enrollment_user_email": "ws1intel.18218@ws1.intelligent.staging.dpa0.org",
        "device_enrollment_user_first_name": "ZULEMA",
        "device_enrollment_user_last_name": "Playatuna",
        "device_enrollment_user_name": "ws1intel.18218",
        "device_friendly_name": "ZULEMA's iPad Mini 4",
        "device_last_seen": 1543530146000,
        "device_os_version": "8.2.3",
        "device_platform": "Apple",
        "document_id": "538f619e-2db4-4f07-974b-18218",
        "entity_name": "airwatch_device",
        "integration": "airwatch"
      },
      {
        "device_corp_liable": "Undefined",
        "device_enrollment_user_email": "ws1intel.14386@ws1.intelligent.staging.dpa0.org",
        "device_enrollment_user_first_name": "ZULEMA",
        "device_enrollment_user_last_name": "Tonelli",
        "device_enrollment_user_name": "ws1intel.14386",
        "device_friendly_name": "ZULEMA's iPad Mini 4",
        "device_last_seen": 1505741655000,
        "device_os_version": "8.1.1",
        "device_platform": "Apple",
        "document_id": "538f619e-2db4-4f07-974b-14386",
        "entity_name": "airwatch_device",
        "integration": "airwatch"
      },
      {
        "device_corp_liable": "EmployeeOwned",
        "device_enrollment_user_email": "ws1intel.17123@ws1.intelligent.staging.dpa0.org",
        "device_enrollment_user_first_name": "ZULA",
        "device_enrollment_user_last_name": "Whaley",
        "device_enrollment_user_name": "ws1intel.17123",
        "device_friendly_name": "ZULA's Apple TV 4th Generation",
        "device_last_seen": 1559000190000,
        "device_model_name": "iPad Pro",
        "device_os_version": "9.2.3",
        "device_platform": "Apple",
      }
    ]
  }
}
"document_id": "538f619e-2db4-4f07-974b-0000000042e3",
"entity_name": "airwatch_device",
"integration": "airwatch"
}
Report Search API

This API allows you to see which reports have been created. The "results" array in the response is an array of report definitions.

Example Request

POST https://api.sandbox.data.vmwservices.com/v1/reports/search

JSON request body:

```json
{
    "offset": 0,
    "page_size": 2
}
```
Example Response

```json
{
  "data": {
    "offset": 0,
    "page_size": 2,
    "results": [
    {
      "column_names": [
        "app_name",
        "device_friendly_name",
        "device_platform",
        "device_os_version",
        "app_version",
        "app_package_id",
        "app_install_status",
        "app_install_status_reason",
        "app_last_seen",
        "device_last_seen",
        "app_is.managed",
        "device_location_group_name",
        "app_type",
        "device_enrollment_status",
        "app_bundle_size_bytes",
        "app_is_installed"
      ],
      "created_at": "2019-05-24T18:31:40.298Z",
      "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
      "description": "All managed and un-managed apps on all devices",
      "entity": "application",
      "entity_label": "Apps",
      "filter": "device_enrollment_status = 'EnrollmentInProgress' AND app_name IN ( '-47Sports.Bolts' )",
      "filter_condition": {
        "custom_attribute": false,
        "lhs": {
          "attribute": "device_enrollment_status",
          "custom_attribute": false,
          "operand_collection_present": false,
          "operands": [
            {
              "data_type": "STRING",
              "operand_type": "BasicOperand",
              "value": "EnrollmentInProgress"
            }
          ],
          "operator": "=",
          "parenthesized": false
        }
      }
    },
```
"logical_operator": "AND",
"operand_collection_present": false,
"parenthesized": false,
"rhs": {
    "attribute": "app_name",
    "custom_attribute": false,
    "operand_collection_present": true,
    "operands": [
    {
        "data_type": "STRING",
        "operand_type": "BasicOperand",
        "value": "-47Sports.Bolts"
    }
    ],
    "operator": "IN",
    "parenthesized": false
}
},
"id": "d6af20e2-6bd0-4d89-a7a1-0d5f09507836",
"integration": "airwatch",
"modified_at": "2019-05-27T18:37:09.408Z",
"modified_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
"name": "All Apps",
"share_view": {
    "created_at": "2019-05-28T05:38:34.535Z",
    "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
    "share_id": "1c951014-02f4-46f8-8569-0fd55ae88581",
    "shareable_link": "https://api.staging.dpa0.org/share/a/1c951014-02f4-46f8-8569-0fd55ae88581"
},
"total_downloads": 12,
"total_schedules": 1
},
{
    "column_names": [
        "device_enrollment_user_name",
        "device_friendly_name",
        "winpatch_revision_id",
        "winpatch_update_id",
        "winpatch_kb_number",
        "winpatch_update_status",
        "winpatch_approval_status",
        "winpatch_assignment_status",
        "winpatch_update_classification",
        "winpatch_approved_date",
        "winpatch_publish_date",
        "device_enrollment_date",
        "device_enrollment_status",
        "device_last_seen",
        "device_unenrollment_date",
        "device_enrollment_user_email",
        "device_os_version",
        "device_model",
    ]
}

"winpatch_kb_subject",
"winpatch_update_type",
"winpatch_kb_desc"
],
"created_at": "2019-05-08T22:22:49.325Z",
"created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
"description": "All OS updates on all devices",
"entity": "windowspatch",
"entity_label": "OS Updates",
"id": "9fc985f2-2ee9-40ef-81fb-ba86b7baf116",
"integration": "airwatch",
"modified_at": "2019-05-08T22:22:49.325Z",
"name": "All Windows OS Updates",
"total_downloads": 1,
"total_schedules": 0
]}
}
Set Report Recipients API

This API allows you to specify the recipients of a report. This functionality is identical to specifying recipients when the report is created.

Example Request

POST https://api.sandbox.data.vmwservices.com/v1/reports/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/recipients

JSON request body

```json
{
    "recipients": [
        {
            "email": "margaret.thatcher@vmware.com"
        },
        {
            "email": "paul.revere@vmware.com"
        }
    ]
}
```

Example Response

```
200 OK
{
    "data": {
        "recipients": [
            {
                "created_at": "2019-06-03T18:10:51.752Z",
                "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
                "email": "margaret.thatcher@vmware.com"
            },
            {
                "created_at": "2019-06-03T18:10:51.752Z",
                "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
                "email": "paul.revere@vmware.com"
            }
        ],
        "report_id": "5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116"
    }
}
```
Get Report Recipients API

To determine which recipients are associated with a report, use the GET report recipients API.

Example Request

GET https://api.sandbox.data.vmwservices.com/v1/reports/5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116/recipients

Example Response

```
200 OK
{
   "data": {
      "recipients": [
         {
            "created_at": "2019-06-03T18:16:31.262Z",
            "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
            "email": "margaret.thatcher@vmware.com"
         },
         {
            "created_at": "2019-06-03T18:16:31.262Z",
            "created_by": "f65716f4-0d44-4c50-8cca-05d1306fbf77",
            "email": "paul.revere@vmware.com"
         }
      ],
      "report_id": "5f2c2fa1-e9ec-4c55-9649-b3fbabf4d116"
   }
}
```

API Call Limits

The calculations of API request amounts allow sufficient capacity for your organization’s number of admin users and user licenses. Workspace ONE license levels categorize rate limits by calls per second, calls per hour, and calls per 24 hours.

Table 1. API Call Limits Per Organization

<table>
<thead>
<tr>
<th>Workspace ONE License Level</th>
<th>Total Calls per Second</th>
<th>Total Calls per Hour</th>
<th>Total Calls per 24 Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>100</td>
<td>1000</td>
<td>15000</td>
</tr>
<tr>
<td>Advanced</td>
<td>100</td>
<td>1000</td>
<td>15000</td>
</tr>
<tr>
<td>Enterprise</td>
<td>100</td>
<td>1000</td>
<td>15000</td>
</tr>
<tr>
<td>Intelligence Add-On</td>
<td>100</td>
<td>1000</td>
<td>15000</td>
</tr>
</tbody>
</table>