



Global AssetView CyberSecurity Asset Management

API User Guide v2
Version 2.0

July 7, 2021

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Preface

This user guide is intended for application developers who will use the Qualys Global AssetView (GAV)/CyberSecurity Asset Management (CSAM) API v2. It is recommended to use v2 APIs.

For GAV, we are still supporting the v1 APIs. Refer [API v1 User Guide](#) to use v1 APIs.

About Qualys

Qualys, Inc. (NASDAQ: QLYS) is a pioneer and leading provider of cloud-based security and compliance solutions. The Qualys Cloud Platform and its integrated apps help businesses simplify security operations and lower the cost of compliance by delivering critical security intelligence on demand and automating the full spectrum of auditing, compliance and protection for IT systems and web applications.

Founded in 1999, Qualys has established strategic partnerships with leading managed service providers and consulting organizations including Accenture, BT, Cognizant Technology Solutions, Deutsche Telekom, Fujitsu, HCL, HP Enterprise, IBM, Infosys, NTT, Optiv, SecureWorks, Tata Communications, Verizon and Wipro. The company is also a founding member of the [Cloud Security Alliance \(CSA\)](#). For more information, please visit www.qualys.com.

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Chapter 1 - Welcome

Welcome to GAV/CSAM API v2.

Get Started

[Qualys API Framework](#) - Learn the basics about making API requests. The base URL depends on the platform where your Qualys account is located.

[Introduction to GAV/CSAM API Paradigm](#) - Get tips on using the Curl command-line tool to make API requests. Every API request must authenticate using a JSON Web Token (JWT) obtained from the Qualys Authentication API.

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Qualys API Framework

The Qualys GAV/CSAM API uses the following framework.

Request URL

The URL for making API requests respects the following structure:

`https://<baseurl>/<module>/<object>/<object_id>/<operation>`

where the components are described below.

<code><baseurl></code>	The Qualys API server URL that you should use for API requests depends on the platform where your account is located. The base URL for Qualys US Platform 1 is: <code>https://gateway.qg1.apps.qualys.com</code>
<code><module></code>	The API module. For the GAV/CSAM, the module is: "am".
<code><object></code>	The module specific object.
<code><object_id></code>	(Optional) The module specific object ID, if appropriate.
<code><operation></code>	The request operation, such as count.

Qualys API Gateway URL

The Qualys API URL you should use for API requests depends on the Qualys platform where your account is located.

[Click here to identify your Qualys platform and get the API URL](#)

This documentation uses the API gateway URL for Qualys US Platform 1 (<https://gateway.qg1.apps.qualys.com>) in sample API requests. If you're on another platform, please replace this URL with the appropriate gateway URL for your account.

Introduction to GAV/CSAM API Paradigm

Authentication

You must authenticate to the Qualys Cloud Platform using Qualys account credentials (user name and password) and get the JSON Web Token (JWT) before you can start using the GAV/CSAM APIs. Use the Qualys Authentication API to get the JWT.

For example,

```
curl -X POST https://gateway.qg1.apps.qualys.com/auth -d  
"username=value1&password=passwordValue&token=true" -H  
"ContentType: application/x-www-form-urlencoded"
```

where gateway.qg1.apps.qualys.com is the base URL to the Qualys API server where your account is located.

- **username** and **password** are the credentials of the user account for which you want to fetch GAV/CSAM data
- **token** should be true
- **Content-Type** should be "application/x-www-form-urlencoded"

The Authentication API returns a JSON Web Token (JWT) which you can use for authentication during GAV/CSAM calls. **The token expires in 4 hours.** You must regenerate the token to continue using the GAV/CSAM API.

Using Curl

Curl is a multi-platform command-line tool used to transfer data using multiple protocols. This tool is supported on many systems, including Windows, Unix, Linux and Mac. In this document Curl is used in the examples to build Qualys API requests using the HTTP over SSL (https) protocol, which is required.

Want to learn more? Visit <https://curl.haxx.se/>

The following Curl options are used according to different situations:

Option	Description
-X "POST"	The POST method is required for all GAV/CSAM API requests.
-H "Authorization: Bearer <token>"	This option is used to provide a custom HTTP request header parameter for authentication. Provide the JSON Web Token (JWT) received from Qualys authentication API in the following format: Authorization: Bearer <token> For information about Qualys authentication API, see Authentication .

The sample below shows a typical Curl request using options mentioned above and how they interact with each other.

```
curl -X POST "https://gateway.qg1.apps.qualys.com/rest/2.0/search/am/asset" -H  
"Authorization: Bearer <token>"
```

Limit your results

Use the optional “fields” parameter for any API request to limit the amount of information returned in the results. Simply specify the fields you want to include or exclude in the output, and all other information will be filtered out (excluded). Multiple fields are comma separated.

Sample limit results

Use this request to get a list of all asset hosts with information for only the operatingSystem and hardware fields:

```
curl -X POST -H 'Accept: */*' -H 'Authorization: <JWT Token>' -H 'Content-Type: application/json' -i 'https://gateway.qg1.apps.qualys.com/rest/2.0/search/am/asset?pageSize=100&includeFields=operatingSystem,hardware'
```

Note:

The response would still include all the fields, but other than the included fields, the value returned for all other fields would be null.

You can include the following fields to limit your results:

address	lastLocation
agent	lastLoggedInUser
agentId	netbiosName
assetName	networkInterface
biosAssetTag	openPort
biosDescription	operatingSystem
biosSerialNumber	processor
cloudProvider	provider
container	sensor
cpuCount	service
dnsName	software
hardware	tag
hostId	timeZone
inventory	totalMemory
isContainerHost	userAccount
lastBoot	volume
criticality	

API Rate Limits

The Qualys API enforces limits on the API calls a customer can make based on their subscription settings. The limits apply to the use of all Qualys APIs except “auth” API (JWT Token Generation API). Default API control settings are provided by the service. Note these settings may be customized per subscription by Qualys Support.

The rate count and period are calculated dynamically each time an API call is received. The rate period represents a rolling window when API calls are counted.

API Controls Definition

X-RateLimit-Remaining: This indicates the total API calls remaining in current rate limit window.

X-RateLimit-ToWait-Sec: This time indicates the wait time for the rate limit to be reset. The customer has to wait for that time to execute next API calls.

X-RateLimit-Window-Sec: This value indicates the total time window assigned for the APIs to be executed.

X-RateLimit-Limit: This indicates the max number of API calls that can be executed in that particular rate limit window.

Sample Request

```
curl -X POST -H 'Accept: */*' -H 'Authorization: Bearer <JWT Token>' -H  
'Content-Type: application/json' -i  
'https://gateway.qgl.apps.qualys.com/rest/2.0/count/am/asset'
```

Note: Provide "-i" in the curl request as shown in the example returns the response headers which includes the rate limit related parameters.

After executing a curl request, check the following parameters in response headers to check the rate-limit status:

X-RateLimit-Remaining: 0

X-RateLimit-ToWait-Sec: 300

X-RateLimit-Window-Sec: 3600

X-RateLimit-Limit: 300

Example: A subscription for Standard API Service has the default API control settings. Consider that the API rate limit set for a customer is 300 API calls for a time window of 3600 seconds. If 300 API calls are received in a 5 minute period and none are blocked by any API limiting rules, then you need to wait 55 minutes before making the next call to the API. During the wait period API calls will be blocked by the rate limiting rule.

Sample HTTP Response Headers

Sample 1: Normal API call (API call not blocked)

```
Server: nginx/1.19.1
Date: Fri, 16 Apr 2021 12:29:52 GMT
Content-Type: application/json
Transfer-Encoding: chunked
Connection: keep-alive
Vary: Accept-Encoding
X-RateLimit-Remaining: 4
X-RateLimit-Window-Sec: 100
X-RateLimit-Limit: 5
Vary: Accept-Encoding
Cache-Control: no-cache, no-store, max-age=0, must-revalidate
Pragma: no-cache
Expires: 0
X-Content-Type-Options: nosniff
X-Frame-Options: DENY
X-XSS-Protection: 1 ; mode=block
Referrer-Policy: no-referrer

{"count":580,"responseCode":"SUCCESS","responseMessage":"Valid API
Access"}
```

Sample 2: API Call Blocked - Rate Limit exceeded

```
Server: nginx/1.19.1
Date: Fri, 16 Apr 2021 12:28:53 GMT
Content-Length: 0
Connection: keep-alive
X-RateLimit-Remaining: 0
X-RateLimit-ToWait-Sec: 33
X-RateLimit-Window-Sec: 100
X-RateLimit-Limit: 5
Cache-Control: no-cache, no-store, max-age=0, must-revalidate
Pragma: no-cache
Expires: 0
X-Content-Type-Options: nosniff
X-Frame-Options: DENY
X-XSS-Protection: 1 ; mode=block
Referrer-Policy: no-referrer
```

Chapter 2 - Assets Host Data APIs

Use these API functions to get host data from GAV/CSAM.

Note: The software.authorization and lifecycle related parameters are available only for CSAM subscription. Hence, you can use it in filter criteria and you can see it in the response if you've subscribed for CSAM.

Permissions

- User must have the GAV/CSAM module and the "App API Enabled" option enabled for that role.

Count of Assets

Get count of assets satisfying the specified filter criteria.

rest/2.0/count/am/asset

[POST]

Input Parameters

filter (String)	Filter the events list by providing a filter in json and xml format. Make sure your filter criteria is provided in xml/json format in the request body. If you don't provide filter parameter, it will show details of all the assets. For more information on supported operators, refer Supported Operators .
--------------------	---

For example (json) -

```
{
  "filters": [
    {
      "field": "software.product",
      "operator": "CONTAINS",
      "value": "Python"
    }
  ]
}
```

For example (xml) -

```
<FilterRequest>
  <filters>
    <Criteria field="software.product"
operator="CONTAINS"><value>Python</value></Criteria>
  </filters>
</FilterRequest>
```

assetLastUpdated (String)	<p>Shows records updated on or after this date with the UTC format as yyyy-MM-ddTHH:mmZ e.g. 2019-03-01T11:30Z</p> <p>This date gets updated whenever any activity happens on the asset. Few examples of such activity:</p> <ul style="list-style-type: none">- Vulnerability Management scan- Policy Compliance scan- Inventory collection- Security Configuration Assessment- CertView scan- AssetView or CloudView connector run- Secure Enterprise Mobility scan- Out-of-Band Configuration Assessment- Asset rename- Purge of VM, PC, OCA, CertView records- Agent manifest download- Asset Inventory asset identification updates
lastSeenAssetId (Integer)	<p>Use to get the count of assets having asset id greater than the specified last seen assetid.</p>
Authorization (String)	<p>(Required) Authorization token to authenticate to the Qualys Cloud Platform. Prepend token with "Bearer" and one space. For example - Bearer authToken</p>

Sample - Get count of all assets with filter criteria

Request:

```
curl -X POST -H 'Accept: */*' -H 'Authorization: Bearer  
<JWTToken>' -H 'Content-Type: application/json' -i  
'https://gateway.qgl.apps.qualys.com/rest/2.0/count/am/asset' <  
filter.json
```

Here, **filter.json** file is the request in json format.

Sample Request body in json format (filter.json)

```
{  
  "filters": [  
    {  
      "field": "software.authorization",  
      "operator": "EQUALS",  
      "value": "Authorized"  
    }  
  ]  
}
```

Response:

```
{  
  "count": 850,  
  "responseCode": "SUCCESS",  
  "responseMessage": "Valid API Access"  
}
```

Get Host details of specific asset

Get details of specific asset by providing an asset id.

rest/2.0/get/am/asset

[GET]

Input Parameters

excludeFields (String)	Comma separated list of fields to be excluded from the asset object in the response. Default is None. You can choose from the list of fields specified in the section "Limit your results" . For example, to exclude openPort and software from the response: excludeFields=openPort,software
includeFields (String)	Comma separated list of fields to be included in the asset object in the response. Default is All. You can choose from the list of fields specified in the section "Limit your results" . For example, to include only operatingSystem and hardware in the response: includeFields=operatingSystem,hardware
assetId (Integer)	(Required) Use to specify theAssetId for which you want to retrieve the details.
Authorization (String)	(Required) Authorization token to authenticate to the Qualys Cloud Platform. Prepend token with "Bearer" and one space. For example - Bearer authToken

Sample - Get host details of specified asset by assetid

Request:

```
curl -X GET -H 'Accept: */*' -H 'Authorization: Bearer <JWTToken>' -H 'Content-Type: application/json' -i 'https://gateway.qg1.apps.qualys.com/rest/2.0/get/am/asset?assetId=8194990'
```

Response:

```
{
  "responseMessage": "Valid API Access",
  "responseCode": "SUCCESS",
  "assetListData": {
    "asset": [
      {
        "assetId": 6920718,
        "assetUUID": "50d20290-c66a-42e7-8c0a-ba6e92b6324c",
        "hostId": 1437386,
        "lastModifiedDate": "2021-04-06T10:02:33.000Z",
```

```
"agentId": null,  
"createdDate": "2020-11-25T12:49:25.000Z",  
"sensorLastUpdatedDate": "2021-04-  
06T10:02:33.000Z",  
"assetType": "HOST",  
"address": "10.115.110.95",  
"dnsName": "localhost.localdomain",  
"assetName": "localhost.localdomain",  
"netbiosName": null,  
"timeZone": "IST",  
"biosDescription": null,  
"lastBoot": null,  
"totalMemory": 5806,  
"cpuCount": null,  
"lastLoggedOnUser": "root",  
"hwUUID": "422a2b16-4c8b-588a-a20c-c1851ad7e376",  
"biosSerialNumber": "VMware-42 2a 2b 16 4c 8b 58 8a-  
a2 0c c1 85 1a d7 e3 76",  
"biosAssetTag": "No Asset Tag",  
"isContainerHost": false,  
"operatingSystem": {  
  "osName": "The CentOS Project CentOS 7 (1810)",  
  "fullName": "The CentOS Project CentOS 7  
(1810)",  
  "category": "Linux / Server",  
  "category1": "Linux",  
  "category2": "Server",  
  "productName": "CentOS",  
  "publisher": "The CentOS Project",  
  "edition": null,  
  "marketVersion": "7",  
  "version": "1810",  
  "update": null,  
  "architecture": null,  
  "lifecycle": {  
    "gaDate": "2018-12-03T00:00:00.000Z",  
    "eolDate": "2020-12-31T00:00:00.000Z",  
    "eosDate": "2024-06-30T00:00:00.000Z",  
    "stage": "EOL",  
    "lifeCycleConfidence": "Exact",  
    "eolSupportStage": "Full updates",  
    "eosSupportStage": "Maintenance Updates"  
  },  
  "taxonomy": {  
    "id": null,  
    "name": "Linux / Server",
```

```
        "category1": "Linux",
        "category2": "Server"
    },
    "productUrl":
"https://www.centos.org/,https://en.wikipedia.org/wiki/CentOS,",
    "productFamily": null,
    "installDate": null
},
"hardware": {
    "fullName": "VMware VMware Virtual Platform
VMware Virtual Platform",
    "category": "Virtualized / Virtual Machine",
    "category1": "Virtualized",
    "category2": "Virtual Machine",
    "manufacturer": "VMware",
    "productName": "VMware Virtual Platform",
    "model": "VMware Virtual Platform",
    "lifecycle": {
        "introDate": null,
        "gaDate": null,
        "eosDate": null,
        "obsoleteDate": null,
        "stage": "Unknown",
        "lifeCycleConfidence": " "
    },
    "taxonomy": {
        "id": null,
        "name": "Virtualized / Virtual Machine",
        "category1": "Virtualized",
        "category2": "Virtual Machine"
    },
    "productUrl":
"https://www.linuxjournal.com/article/3458,,",
    "productFamily": null
},
"userAccountListData": null,
"openPortListData": {
    "openPort": [
        {
            "port": 709,
            "description": "",
            "protocol": "UDP",
            "detectedService": "portmap/rpcbind",
            "firstFound": "2020-11-
25T12:46:42.000Z",
            "lastUpdated": "2020-11-
```



```
25T12:46:42.000Z"
    },
    {
      "port": 50000,
      "description": "",
      "protocol": "TCP",
      "detectedService":
"IBM_DB2_Universal_Database",
      "firstFound": "2020-11-
25T12:46:42.000Z",
      "lastUpdated": "2020-11-
25T12:46:42.000Z"
    },
    {
      "port": 6000,
      "description": "",
      "protocol": "TCP",
      "detectedService": "x11",
      "firstFound": "2020-11-
25T12:46:42.000Z",
      "lastUpdated": "2020-11-
25T12:46:42.000Z"
    },
    {
      "port": 22,
      "description": "",
      "protocol": "TCP",
      "detectedService": "ssh",
      "firstFound": "2020-11-
25T12:46:41.000Z",
      "lastUpdated": "2020-11-
25T12:46:41.000Z"
    },
    {
      "port": 3389,
      "description": "",
      "protocol": "TCP",
      "detectedService": null,
      "firstFound": "2020-11-
25T12:46:42.000Z",
      "lastUpdated": "2020-11-
25T12:46:42.000Z"
    },
    {
      "port": 111,
      "description": "",
```

```
                "protocol": "UDP",
                "detectedService": "rpc_udp",
                "firstFound": "2020-11-
25T12:46:42.000Z",
                "lastUpdated": "2020-11-
25T12:46:42.000Z"
            },
            {
                "port": 111,
                "description": "",
                "protocol": "TCP",
                "detectedService": "rpc",
                "firstFound": "2020-11-
25T12:46:41.000Z",
                "lastUpdated": "2020-11-
25T12:46:41.000Z"
            }
        ]
    },
    "volumeListData": {
        "volume": [
            {
                "name": "tmpfs",
                "free": 2737078272,
                "size": 3043934208
            },
            {
                "name": "/dev/mapper/centos-home",
                "free": 18629619712,
                "size": 18700304384
            },
            {
                "name": "devtmpfs",
                "free": 3026444288,
                "size": 3026444288
            },
            {
                "name": "/dev/mapper/centos-root",
                "free": 19672580096,
                "size": 38304645120
            },
            {
                "name": "/dev/sda1",
                "free": 876040192,
                "size": 1063256064
            }
        ]
    }
}
```

```
]
},
"networkInterfaceListData": {
  "networkInterface": [
    {
      "hostname": "localhost.localdomain",
      "addressIPv4": "192.168.122.1",
      "addressIPv6": null,
      "macAddress": "52:54:00:77:e1:71",
      "interfaceName": "virbr0",
      "dnsAddress": null,
      "gatewayAddress": "",
      "manufacturer": null,
      "macVendorIntroDate": null,
      "addresses": null
    },
    {
      "hostname": "localhost.localdomain",
      "addressIPv4": "10.115.110.95",
      "addressIPv6":
"fe80:0:0:0:250:56ff:feaa:e2da",
      "macAddress": "00:50:56:aa:e2:da",
      "interfaceName": "ens192",
      "dnsAddress": null,
      "gatewayAddress": "",
      "manufacturer": "VMware",
      "macVendorIntroDate": 946944000000,
      "addresses": null
    }
  ]
},
"softwareListData": {
  "software": [
    {
      "id": -5698725809391962787,
      "fullName": "Python 2.7.5 64-Bit",
      "softwareType": "Application",
      "isIgnored": false,
      "ignoredReason": null,
      "category": "Application Development /
Programming Languages",
      "category1": "Application Development",
      "category2": "Programming Languages",
      "productName": "Python",
      "component": null,
      "publisher": "Python",
```

```
    "edition": null,  
    "marketVersion": "2",  
    "version": "2.7",  
    "update": "2.7.5",  
    "architecture": "64-Bit",  
    "installDate": "2020-03-  
27T16:11:47.000Z",  
    "installPath": null,  
    "lastUpdated": "2020-11-  
25T12:46:46.000Z",  
    "lastUseDate": null,  
    "language": null,  
    "formerlyKnownAs": null,  
    "isPackage": false,  
    "isPackageComponent": false,  
    "packageName": null,  
    "productUrl":  
"https://en.wikipedia.org/wiki/History_of_Python,,",  
    "lifecycle": {  
        "gaDate": "2010-07-03T00:00:00.000Z",  
        "eolDate": "2020-01-  
01T00:00:00.000Z",  
        "eosDate": "2020-01-  
01T00:00:00.000Z",  
        "stage": "EOL/EOS",  
        "lifeCycleConfidence": "Exact",  
        "eolSupportStage": "End-of-life",  
        "eosSupportStage": "End-of-life"  
    },  
    "supportStageDesc": "Python's policy is  
to drop support major versions once they reach their end of life",  
    "license": {  
        "category": "Open Source",  
        "subcategory": "Python License  
(Python-2.0)"  
    },  
    "authorization": "Authorized"  
},  
    {  
        "id": 9136542396418607016,  
        "fullName": "OpenBSD OpenSSH Server  
7.4p1",  
        "softwareType": "Application",  
        "isIgnored": false,  
        "ignoredReason": null,  
        "category": "Networking / Access
```

```
Software",
    "category1": "Networking",
    "category2": "Access Software",
    "productName": "OpenSSH",
    "component": "Server",
    "publisher": "OpenBSD",
    "edition": null,
    "marketVersion": "7",
    "version": "7.4",
    "update": "7.4p1",
    "architecture": null,
    "installDate": "2020-03-
05T14:23:53.000Z",
    "installPath": null,
    "lastUpdated": "2020-11-
25T12:46:53.000Z",
    "lastUseDate": null,
    "language": null,
    "formerlyKnownAs": "OpenBSD Secure
Shell",
    "isPackage": true,
    "isPackageComponent": false,
    "packageName": null,
    "productUrl":
"https://en.wikipedia.org/wiki/OpenSSH,,",
    "lifecycle": {
        "gaDate": "2016-12-19T00:00:00.000Z",
        "eolDate": null,
        "eosDate": null,
        "stage": "EOL",
        "lifeCycleConfidence": "Calculated",
        "eolSupportStage": " ",
        "eosSupportStage": " "
    },
    "supportStageDesc": null,
    "license": {
        "category": "Open Source",
        "subcategory": "BSD 2-Clause License
(FreeBSD/Simplified)"
    },
    "authorization": "Authorized"
}
]
},
"provider": null,
"cloudProvider": null,
```

```
"agent": null,  
"sensor": {  
  "activatedForModules": [  
    "VM"  
  ],  
  "pendingActivationForModules": [],  
  "lastVMScan": 1606306572000,  
  "lastComplianceScan": 0,  
  "lastFullScan": 1606306572000  
},  
"container": null,  
"inventory": {  
  "source": "IP",  
  "created": 1606308565000,  
  "lastUpdated": 1617703353000  
},  
"activity": null,  
"tagList": {  
  "tag": [  
    {  
      "tagId": 14151022,  
      "tagName": "static split",  
      "foregroundColor": 0,  
      "backgroundColor": -65536,  
      "businessImpact": null,  
      "criticalityScore": 2  
    }  
  ]  
},  
"serviceList": null,  
"lastLocation": null,  
"criticality": {  
  "score": 2,  
  "isDefault": true,  
  "lastUpdated": "2021-06-30T09:43:27.000Z"  
},  
"processor": null  
}  
]  
}
```

Get Host Details of All Assets

Get details of all assets that satisfy the filter criteria to include or exclude specified fields. If you don't provide filter parameter, it will show details of all the assets.

rest/2.0/search/am/asset

[POST]

Input Parameter

excludeFields (String)	Comma separated list of fields to be excluded from the asset object in the response. Default is None. You can choose from the list of fields specified in the section " Limit your results ". For example, to exclude openPort and software from the response: excludeFields=openPort,software
includeFields (String)	Comma separated list of fields to be included in the asset object in the response. Default is All. You can choose from the list of fields specified in the section " Limit your results ". For example, to include only operatingSystem and hardware in the response: includeFields=operatingSystem,hardware
assetLastUpdated (String)	Shows records updated on or after this date with the UTC format as yyyy-MM-ddTHH:mmZ e.g. 2019-03-01T11:30Z This date gets updated whenever any activity happens on the asset. Few examples of such activity: <ul style="list-style-type: none">- Vulnerability Management scan- Policy Compliance scan- Inventory collection- Security Configuration Assessment- CertView scan- AssetView or CloudView connector run- Secure Enterprise Mobility scan- Out-of-Band Configuration Assessment- Asset rename- Purge of VM, PC, OCA, CertView records- Agent manifest download- Asset Inventory asset identification updates
lastSeenAssetId (Integer)	Use to get the count of assets having asset id greater than the specified last seen assetid.
pageSize (Integer)	The number of records per page to be included in the response. If pageSize is not specified in the request, 100 records will be fetched by default. The maximum value supported for pageSize is 100.

filter (String) Filter the events list by providing a filter in json and xml format. Make sure your filter criteria is provided in xml/json format in the request body. If you don't provide filter parameter, it will show details of all the assets. For more information on supported operators, refer [Supported Operators](#).

For example (json) -

```
{
  "filters": [
    {
      "field": "software.product",
      "operator": "CONTAINS",
      "value": "Python"
    }
  ]
}
```

For example (xml) -

```
<FilterRequest>
  <filters>
    <Criteria field="software.product"
operator="CONTAINS"><value>Python</value></Criteria>
  </filters>
</FilterRequest>
```

Authorization (String) (Required) Authorization token to authenticate to the Qualys Cloud Platform. Prepend token with "Bearer" and one space. For example - Bearer authToken

Sample - Get details of all asset

Request (without filter):

```
curl -X POST -H 'Accept: application/json' -H 'Authorization: Bearer <JWTToken>' -H 'Content-Type: application/json' -i 'https://gateway.qg1.apps.qualys.com/rest/2.0/search/am/asset'
```

Request (with filter - xml):

```
curl -X POST -H 'Accept: application/xml' -H 'Authorization: Bearer <JWTToken>' -H 'Content-Type: application/xml' -i 'https://gateway.qg1.apps.qualys.com/rest/2.0/search/am/asset' < filter.xml
```

Here, **filter.xml** file is the request in xml format.

Request (with filter - json):

```
curl -X POST -H 'Accept: application/json' -H 'Authorization: Bearer <JWTToken>' -H 'Content-Type: application/json' -i 'https://gateway.qg1.apps.qualys.com/rest/2.0/search/am/asset' < filter.json
```

Here, **filter.json** file is the request in json format.

Sample Request body in xml format (filter.xml)

```
<FilterRequest>
  <filters>
    <Criteria field="operatingSystem.category1"
operator="EQUALS"><value>Mac</value></Criteria>
  </filters>
</FilterRequest>
```

Sample Request body in json format (filter.json)

```
{
  "filters": [
    {
      "field": "operatingSystem.category1",
      "operator": "EQUALS",
      "value": "Mac"
    }
  ]
}
```

Response:

```
{
  "responseMessage": "Valid API Access",
```

```
"count": 1,
"responseCode": "SUCCESS",
"lastSeenAssetId": 6920718,
"hasMore": 1,
"assetListData": {
  "asset": [
    {
      "assetId": 6920718,
      "assetUUID": "50d20290-c66a-42e7-8c0a-
ba6e92b6324c",
      "hostId": 1437386,
      "lastModifiedDate": "2021-04-06T10:02:33.000Z",
      "agentId": null,
      "createdDate": "2020-11-25T12:49:25.000Z",
      "sensorLastUpdatedDate": "2021-04-
06T10:02:33.000Z",
      "assetType": "HOST",
      "address": "10.115.110.95",
      "dnsName": "localhost.localdomain",
      "assetName": "localhost.localdomain",
      "netbiosName": null,
      "timeZone": "IST",
      "biosDescription": null,
      "lastBoot": null,
      "totalMemory": 5806,
      "cpuCount": null,
      "lastLoggedOnUser": "root",
      "hwUUID": "422a2b16-4c8b-588a-a20c-c1851ad7e376",
      "biosSerialNumber": "VMware-42 2a 2b 16 4c 8b 58 8a-
a2 0c c1 85 1a d7 e3 76",
      "biosAssetTag": "No Asset Tag",
      "isContainerHost": false,
      "operatingSystem": {
        "osName": "The CentOS Project CentOS 7 (1810)",
        "fullName": "The CentOS Project CentOS 7
(1810)",
        "category": "Linux / Server",
        "category1": "Linux",
        "category2": "Server",
        "productName": "CentOS",
        "publisher": "The CentOS Project",
        "edition": null,
        "marketVersion": "7",
        "version": "1810",
        "update": null,
        "architecture": null,
```

```
    "lifecycle": {
      "gaDate": "2018-12-03T00:00:00.000Z",
      "eolDate": "2020-12-31T00:00:00.000Z",
      "eosDate": "2024-06-30T00:00:00.000Z",
      "stage": "EOL",
      "lifeCycleConfidence": "Exact",
      "eolSupportStage": "Full updates",
      "eosSupportStage": "Maintenance Updates"
    },
    "taxonomy": {
      "id": null,
      "name": "Linux / Server",
      "category1": "Linux",
      "category2": "Server"
    },
    "productUrl":
"https://www.centos.org/,https://en.wikipedia.org/wiki/CentOS,",
    "productFamily": null,
    "installDate": null
  },
  "hardware": {
    "fullName": "VMware VMware Virtual Platform
VMware Virtual Platform",
    "category": "Virtualized / Virtual Machine",
    "category1": "Virtualized",
    "category2": "Virtual Machine",
    "manufacturer": "VMware",
    "productName": "VMware Virtual Platform",
    "model": "VMware Virtual Platform",
    "lifecycle": {
      "introDate": null,
      "gaDate": null,
      "eosDate": null,
      "obsoleteDate": null,
      "stage": "Unknown",
      "lifeCycleConfidence": " "
    },
    "taxonomy": {
      "id": null,
      "name": "Virtualized / Virtual Machine",
      "category1": "Virtualized",
      "category2": "Virtual Machine"
    },
    "productUrl":
"https://www.linuxjournal.com/article/3458,,",
    "productFamily": null
  }
}
```

```
    },
    "userAccountListData": null,
    "openPortListData": {
      "openPort": [
        {
          "port": 709,
          "description": "",
          "protocol": "UDP",
          "detectedService": "portmap/rpcbind",
          "firstFound": "2020-11-
25T12:46:42.000Z",
          "lastUpdated": "2020-11-
25T12:46:42.000Z"
        },
        {
          "port": 50000,
          "description": "",
          "protocol": "TCP",
          "detectedService":
"IBM_DB2_Universal_Database",
          "firstFound": "2020-11-
25T12:46:42.000Z",
          "lastUpdated": "2020-11-
25T12:46:42.000Z"
        },
        {
          "port": 6000,
          "description": "",
          "protocol": "TCP",
          "detectedService": "x11",
          "firstFound": "2020-11-
25T12:46:42.000Z",
          "lastUpdated": "2020-11-
25T12:46:42.000Z"
        },
        {
          "port": 22,
          "description": "",
          "protocol": "TCP",
          "detectedService": "ssh",
          "firstFound": "2020-11-
25T12:46:41.000Z",
          "lastUpdated": "2020-11-
25T12:46:41.000Z"
        },
        {
```

```
        "port": 3389,  
        "description": "",  
        "protocol": "TCP",  
        "detectedService": null,  
        "firstFound": "2020-11-  
25T12:46:42.000Z",  
        "lastUpdated": "2020-11-  
25T12:46:42.000Z"  
    },  
    {  
        "port": 111,  
        "description": "",  
        "protocol": "UDP",  
        "detectedService": "rpc_udp",  
        "firstFound": "2020-11-  
25T12:46:42.000Z",  
        "lastUpdated": "2020-11-  
25T12:46:42.000Z"  
    },  
    {  
        "port": 111,  
        "description": "",  
        "protocol": "TCP",  
        "detectedService": "rpc",  
        "firstFound": "2020-11-  
25T12:46:41.000Z",  
        "lastUpdated": "2020-11-  
25T12:46:41.000Z"  
    }  
]  
},  
"volumeListData": {  
    "volume": [  
        {  
            "name": "tmpfs",  
            "free": 2737078272,  
            "size": 3043934208  
        },  
        {  
            "name": "/dev/mapper/centos-home",  
            "free": 18629619712,  
            "size": 18700304384  
        },  
        {  
            "name": "devtmpfs",  
            "free": 3026444288,  
            "size": 3026444288,  
            "used": 0  
        }  
    ]  
}
```

```
        "size": 3026444288
      },
      {
        "name": "/dev/mapper/centos-root",
        "free": 19672580096,
        "size": 38304645120
      },
      {
        "name": "/dev/sda1",
        "free": 876040192,
        "size": 1063256064
      }
    ]
  },
  "networkInterfaceListData": {
    "networkInterface": [
      {
        "hostname": "localhost.localdomain",
        "addressIPv4": "192.168.122.1",
        "addressIPv6": null,
        "macAddress": "52:54:00:77:e1:71",
        "interfaceName": "virbr0",
        "dnsAddress": null,
        "gatewayAddress": "",
        "manufacturer": null,
        "macVendorIntroDate": null,
        "addresses": null
      },
      {
        "hostname": "localhost.localdomain",
        "addressIPv4": "10.115.110.95",
        "addressIPv6":
"fe80:0:0:0:250:56ff:feaa:e2da",
        "macAddress": "00:50:56:aa:e2:da",
        "interfaceName": "ens192",
        "dnsAddress": null,
        "gatewayAddress": "",
        "manufacturer": "VMware",
        "macVendorIntroDate": 946944000000,
        "addresses": null
      }
    ]
  },
  "softwareListData": {
    "software": [
      {
```

```
"id": -5698725809391962787,  
"fullName": "Python 2.7.5 64-Bit",  
"softwareType": "Application",  
"isIgnored": false,  
"ignoredReason": null,  
"category": "Application Development /  
Programming Languages",  
"category1": "Application Development",  
"category2": "Programming Languages",  
"productName": "Python",  
"component": null,  
"publisher": "Python",  
"edition": null,  
"marketVersion": "2",  
"version": "2.7",  
"update": "2.7.5",  
"architecture": "64-Bit",  
"installDate": "2020-03-  
27T16:11:47.000Z",  
"installPath": null,  
"lastUpdated": "2020-11-  
25T12:46:46.000Z",  
"lastUseDate": null,  
"language": null,  
"formerlyKnownAs": null,  
"isPackage": false,  
"isPackageComponent": false,  
"packageName": null,  
"productUrl":  
"https://en.wikipedia.org/wiki/History_of_Python,,",  
"lifecycle": {  
  "gaDate": "2010-07-03T00:00:00.000Z",  
  "eolDate": "2020-01-  
01T00:00:00.000Z",  
  "eosDate": "2020-01-  
01T00:00:00.000Z",  
  "stage": "EOL/EOS",  
  "lifeCycleConfidence": "Exact",  
  "eolSupportStage": "End-of-life",  
  "eosSupportStage": "End-of-life"  
},  
"supportStageDesc": "Python's policy is  
to drop support major versions once they reach their end of life",  
"license": {  
  "category": "Open Source",  
  "subcategory": "Python License
```

```
(Python-2.0) "
    },
    "authorization": "Authorized"
  },
  {
    "id": 9136542396418607016,
    "fullName": "OpenBSD OpenSSH Server
7.4p1",
    "softwareType": "Application",
    "isIgnored": false,
    "ignoredReason": null,
    "category": "Networking / Access
Software",
    "category1": "Networking",
    "category2": "Access Software",
    "productName": "OpenSSH",
    "component": "Server",
    "publisher": "OpenBSD",
    "edition": null,
    "marketVersion": "7",
    "version": "7.4",
    "update": "7.4p1",
    "architecture": null,
    "installDate": "2020-03-
05T14:23:53.000Z",
    "installPath": null,
    "lastUpdated": "2020-11-
25T12:46:53.000Z",
    "lastUseDate": null,
    "language": null,
    "formerlyKnownAs": "OpenBSD Secure
Shell",
    "isPackage": true,
    "isPackageComponent": false,
    "packageName": null,
    "productUrl":
"https://en.wikipedia.org/wiki/OpenSSH,,",
    "lifecycle": {
      "gaDate": "2016-12-19T00:00:00.000Z",
      "eolDate": null,
      "eosDate": null,
      "stage": "EOL",
      "lifeCycleConfidence": "Calculated",
      "eolSupportStage": " ",
      "eosSupportStage": " "
    }
  },
}
```



```
        "supportStageDesc": null,
        "license": {
            "category": "Open Source",
            "subcategory": "BSD 2-Clause License
(FreeBSD/Simplified)"
        },
        "authorization": "Authorized"
    }
]
},
"provider": null,
"cloudProvider": null,
"agent": null,
"sensor": {
    "activatedForModules": [
        "VM"
    ],
    "pendingActivationForModules": [],
    "lastVMScan": 1606306572000,
    "lastComplianceScan": 0,
    "lastFullScan": 1606306572000
},
"container": null,
"inventory": {
    "source": "IP",
    "created": 1606308565000,
    "lastUpdated": 1617703353000
},
"activity": null,
"tagList": {
    "tag": [
        {
            "tagId": 14151022,
            "tagName": "static split",
            "foregroundColor": 0,
            "backgroundColor": -65536,
            "businessImpact": null,
            "criticalityScore": 3
        }
    ]
},
"serviceList": null,
"lastLocation": null,
"criticality": {
    "score": 2,
    "isDefault": true,
```

```
        "lastUpdated": "2021-06-30T09:43:27.000Z"  
      },  
      "processor": null  
    }  
  ]  
}  
}
```

Appendix

This appendix describes the types of error messages returned from GAV/CSAM API requests, list of operators with supported attributes.

Error Messages

Error Code	Description
400	The request could not be understood by the server due to malformed syntax. This error also occurs if you provide wrong (or unsupported) operator in the request.
403 Forbidden	This response code is returned for the following scenarios: <ul style="list-style-type: none"> - If the Asset Inventory License is in “Pending Activation”. - If “App API Enabled” option is not checked. - If “App API Enabled” option is checked, but the license expiration date (for Trial/Full customers) has elapsed. - If the customer’s license subscription cannot be validated.
404 Not found	The server has not found anything matching the Request
416 Requested Range Not Satisfiable	Please provide a Page Size value less than the max page size limit set.
500 Failure	The server encountered an unexpected condition which prevented it from fulfilling the request

Supported Operators

This section of the appendix lists supported operators for tokens.

Operator	Values
NUMERIC_OPERATORS	EQUALS, IN, NOT_EQUALS, GREATER, LESSER, GREATER_THAN_EQUAL, and LESS_THAN_EQUAL
NUMERIC_AND_NOT_EQUAL_OPERATORS	EQUALS, IN, GREATER, LESSER, GREATER_THAN_EQUAL, LESS_THAN_EQUAL
STRING_OPERATORS	CONTAINS, IN, EQUALS, and NOT_EQUALS
STRING_AND_NOT_EQUAL_OPERATORS	CONTAINS, IN, and EQUALS

Operator	Values
DATE_OPERATORS	EQUALS, NOT_EQUALS, GREATER, LESSER, GREATER_THAN_EQUAL, and LESS_THAN_EQUAL
BOOLEAN_OPERATORS	EQUALS
ENUM_OPERATORS	EQUALS, NOT_EQUALS, and IN
UUID_OPERATORS	EQUALS and IN
IP_OPERATORS	EQUALS and IN

Following table lists different attributes with supported operators:

Attribute	Operator
Asset Attributes	
asset.assetID	NUMERIC_OPERATORS
asset.name	STRING_OPERATORS
asset.created	DATE_OPERATORS
asset.lastUpdated	DATE_OPERATORS
asset.type	ENUM_OPERATORS
asset.lastLoggedInUser	STRING_OPERATORS
asset.totalMemory	NUMERIC_OPERATORS
asset.timezone	STRING_OPERATORS
asset.trackingMethod	ENUM_OPERATORS
asset.lastBoot	DATE_OPERATORS
asset.netbiosName	STRING_OPERATORS
asset.hostID	NUMERIC_OPERATORS
asset.isContainerHost	BOOLEAN_OPERATORS
asset.biosAssetTag	STRING_OPERATORS
asset.biosDescription	STRING_OPERATORS
asset.biosHardwareUUID	STRING_OPERATORS
asset.biosSerialNumber	STRING_OPERATORS
asset.agentID	UUID_OPERATORS
asset.criticalityScore	NUMERIC_OPERATORS
accounts.username	STRING_OPERATORS
provider	ENUM_OPERATORS
isDockerHost	BOOLEAN_OPERATORS
Inventory Attributes	
inventory.source	STRING_OPERATORS

Attribute	Operator
inventory.created	DATE_OPERATORS
inventory.lastUpdated	DATE_OPERATORS
Processor Attributes	
processors	STRING_AND_NOT_EQUAL_OPERATORS
processors.speed	NUMERIC_AND_NOT_EQUAL_OPERATORS
Container Attributes	
container.noOfContainers	NUMERIC_AND_NOT_EQUAL_OPERATORS
container.noOfImages	NUMERIC_AND_NOT_EQUAL_OPERATORS
container.version	STRING_AND_NOT_EQUAL_OPERATORS
Interface Attributes	
interfaces.hostname	STRING_AND_NOT_EQUAL_OPERATORS
interfaces.interfaceName	STRING_AND_NOT_EQUAL_OPERATORS
interfaces.macAddress	STRING_AND_NOT_EQUAL_OPERATORS
interfaces.manufacturer	STRING_AND_NOT_EQUAL_OPERATORS
interfaces.address	IP_OPERATORS
interfaces.dnsAddress	IP_OPERATORS
interfaces.gatewayAddress	IP_OPERATORS
Open Ports Attributes	
openPorts.description	STRING_AND_NOT_EQUAL_OPERATORS
openPorts.detectedService	STRING_AND_NOT_EQUAL_OPERATORS
openPorts.protocol	STRING_AND_NOT_EQUAL_OPERATORS
openPorts.port	NUMERIC_AND_NOT_EQUAL_OPERATORS
openPorts.firstFound	DATE_OPERATORS
openPorts.lastUpdated	DATE_OPERATORS
Services Attributes	
services.description	STRING_AND_NOT_EQUAL_OPERATORS
services.name	STRING_AND_NOT_EQUAL_OPERATORS
services.status	STRING_AND_NOT_EQUAL_OPERATORS
Sensors Attributes	
sensors.lastComplianceScan	DATE_OPERATORS
sensors.lastFullScan	DATE_OPERATORS
sensors.lastVmScan	DATE_OPERATORS
Tag Attributes	
tags.name	EQUALS, IN, CONTAINS

Attribute	Operator
tags.businessImpact	EQUALS, IN, CONTAINS
Volume Attributes	
volumes.free	NUMERIC_AND_NOT_EQUAL_OPERATORS
volumes.size	NUMERIC_AND_NOT_EQUAL_OPERATORS
volumes.name	STRING_AND_NOT_EQUAL_OPERATORS
Agent Attributes	
agent.version	NUMERIC_AND_NOT_EQUAL_OPERATORS
agent.connectedFrom	IP_OPERATORS
agent.errorStatus	BOOLEAN_OPERATORS
agent.lastActivity	DATE_OPERATORS
agent.lastCheckedIn	DATE_OPERATORS
Hardware Attributes	
hardware	STRING_OPERATORS
hardware.category	STRING_OPERATORS
hardware.category1	STRING_OPERATORS
hardware.category2	STRING_OPERATORS
hardware.manufacturer	STRING_OPERATORS
hardware.model	STRING_OPERATORS
hardware.product	STRING_OPERATORS
hardware.lifecycle.stage	STRING_OPERATORS
hardware.lifecycle.eos	DATE_OPERATORS
hardware.lifecycle.ga	DATE_OPERATORS
hardware.lifecycle.intro	DATE_OPERATORS
hardware.lifecycle.obs	DATE_OPERATORS
Software Attributes	
software.architecture	STRING_OPERATORS
software.category	STRING_OPERATORS
software.category1	STRING_OPERATORS
software.category2	STRING_OPERATORS
software.component	STRING_OPERATORS
software.edition	STRING_OPERATORS
software.marketVersion	STRING_OPERATORS
software.name	STRING_OPERATORS
software.product	STRING_OPERATORS

Attribute	Operator
software.publisher	STRING_OPERATORS
software.supportStage	STRING_OPERATORS
software.version	STRING_OPERATORS
software.update	STRING_OPERATORS
software.isPackage	BOOLEAN_OPERATORS
software.isPackageComponent	BOOLEAN_OPERATORS
software.license.category	STRING_OPERATORS
software.license.subcategory	STRING_OPERATORS
software.lifecycle.stage	STRING_OPERATORS
software.installDate	DATE_OPERATORS
software.lastUseDate	DATE_OPERATORS
software.lastUpdated	DATE_OPERATORS
software.lifecycle.eol	DATE_OPERATORS
software.lifecycle.eos	DATE_OPERATORS
software.lifecycle.ga	DATE_OPERATORS
software.authorization	EQUALS, NOT_EQUALS, and IN
Operating System Attributes	
operatingSystem	STRING_OPERATORS
operatingSystem.category	STRING_OPERATORS
operatingSystem.category1	STRING_OPERATORS
operatingSystem.category2	STRING_OPERATORS
operatingSystem.architecture	STRING_OPERATORS
operatingSystem.component	STRING_OPERATORS
operatingSystem.edition	STRING_OPERATORS
operatingSystem.marketVersion	STRING_OPERATORS
operatingSystem.name	STRING_OPERATORS
operatingSystem.publisher	STRING_OPERATORS
operatingSystem.version	STRING_OPERATORS
operatingSystem.update	STRING_OPERATORS
operatingSystem.lifecycle.stage	STRING_OPERATORS
operatingSystem.installDate	DATE_OPERATORS
operatingSystem.lifecycle.eol	DATE_OPERATORS
operatingSystem.lifecycle.eos	DATE_OPERATORS
operatingSystem.lifecycle.ga	DATE_OPERATORS

Attribute	Operator
AWS Attributes	
aws.ec2.availabilityZone	STRING_OPERATORS
aws.ec2.instanceType	STRING_OPERATORS
aws.ec2.publicDNS	STRING_OPERATORS
aws.ec2.privateDNS	STRING_OPERATORS
aws.ec2.accountId	STRING_OPERATORS
aws.ec2.imageId	STRING_OPERATORS
aws.ec2.instanceId	STRING_OPERATORS
aws.ec2.instanceState	STRING_OPERATORS
aws.ec2.region.code	STRING_OPERATORS
aws.ec2.subnetId	STRING_OPERATORS
aws.ec2.vpcId	STRING_OPERATORS
aws.ec2.hostname	STRING_OPERATORS
aws.ec2.privateIpAddress	IP_OPERATORS
aws.ec2.publicIpAddress	IP_OPERATORS
aws.tags.key	STRING_OPERATORS
aws.tags.value	STRING_OPERATORS
aws.ec2.spotInstance	STRING_OPERATORS
aws.ec2.launchDate	DATE_OPERATORS
aws.ec2.hasAgent	BOOLEAN_OPERATORS
Azure Attributes	
azure.vm.imageOffer	STRING_OPERATORS
azure.vm.imagePublisher	STRING_OPERATORS
azure.vm.imageVersion	STRING_OPERATORS
azure.vm.name	STRING_OPERATORS
azure.vm.size	STRING_OPERATORS
azure.vm.vmId	STRING_OPERATORS
azure.vm.resourceGroupName	STRING_OPERATORS
azure.vm.state	STRING_OPERATORS
azure.vm.subnet	STRING_OPERATORS
azure.vm.subscriptionId	STRING_OPERATORS
azure.vm.location	STRING_OPERATORS
azure.vm.platform	STRING_OPERATORS
azure.vm.macAddress	STRING_OPERATORS

Attribute	Operator
azure.tags.value	STRING_OPERATORS
azure.tags.name	STRING_OPERATORS
azure.vm.privateIpAddress	IP_OPERATORS
azure.vm.publicIpAddress	IP_OPERATORS
azure.vm.hasAgent	BOOLEAN_OPERATORS
GCP Attributes	
gcp.compute.hostname	STRING_OPERATORS
gcp.compute.instanceId	STRING_OPERATORS
gcp.compute.machineType	STRING_OPERATORS
gcp.compute.network	STRING_OPERATORS
gcp.compute.projectId	STRING_OPERATORS
gcp.compute.projectNumber	STRING_OPERATORS
gcp.compute.macAddress	STRING_OPERATORS
gcp.compute.state	STRING_OPERATORS
gcp.compute.zone	STRING_OPERATORS
gcp.compute.privateIpAddress	IP_OPERATORS
gcp.compute.publicIpAddress	IP_OPERATORS
Geo IP Attributes	
asset.lastLocation	STRING_OPERATORS
asset.lastLocation.city	STRING_OPERATORS
asset.lastLocation.country	STRING_OPERATORS
asset.lastLocation.continent	STRING_OPERATORS
asset.lastLocation.postal	STRING_OPERATORS
asset.lastLocation.state	STRING_OPERATORS

Note: Following tokens are available only for CSAM License Subscriber:

hardware.lifecycle.stage, hardware.lifecycle.eos, hardware.lifecycle.ga,
hardware.lifecycle.intro, hardware.lifecycle.obs,
software.authorization, software.license.category,
software.license.subcategory, software.lifecycle.eol,
software.lifecycle.eos, software.lifecycle.ga, software.lifecycle.stage,
software.isPackage, software.isPackageComponent,
operatingSystem.lifecycle.eol, operatingSystem.lifecycle.eos,
operatingSystem.lifecycle.ga, and operatingSystem.lifecycle.stage

Following are some example to understand the different supported operators by comparing QQL(UI) tokens:

Example 1 - hardware.category1:Computers

Request Body in XML:

```
<FilterRequest>
  <filters>
    <Criteria field="hardware.category1" operator="CONTAINS">
      <value>Computers</value>
    </Criteria>
  </filters>
</FilterRequest>
```

OR *Request Body in Json:*

```
{
  "filters": [
    {
      "field": "hardware.category1",
      "operator": "CONTAINS",
      "value": "Computers"
    }
  ]
}
```

Example 2 - hardware.manufacturer:`Apple` OR hardware.manufacturer:`HPE`

Request Body in XML:

```
<FilterRequest>
  <filters>
    <Criteria field="hardware.manufacturer" operator="IN">
      <value>Apple,HPE</value>
    </Criteria>
  </filters>
</FilterRequest>
```

Example 3 - software:(product:Python and update:2.7.5)

Request Body in XML:

```
<FilterRequest>
  <filters>
    <Criteria field="software.product" operator="CONTAINS">
      <value>Python</value>
    </Criteria>
```

```

        <Criteria field="software.update" operator="CONTAINS">
            <value>2.7.5</value>
        </Criteria>
    </filters>
</FilterRequest>

```

Example 4 - operatingSystem.category1:Mac` and hardware.category:Notebook

Request Body in XML:

```

<FilterRequest>
    <filters>
        <Criteria field="operatingSystem.category1"
operator="EQUALS">
            <value>Mac</value>
        </Criteria>
        <Criteria field="hardware.category" operator="EQUALS">
            <value>Notebook</value>
        </Criteria>
    </filters>
</FilterRequest>

```

Example 5 - operatingSystem.category1:Mac` or hardware.category:Notebook

Request Body in XML:

```

<FilterRequest>
    <filters>
        <Criteria field="operatingSystem.category1"
operator="EQUALS">
            <value>Mac</value>
        </Criteria>
        <Criteria field="hardware.category" operator="EQUALS">
            <value>Notebook</value>
        </Criteria>
    </filters>
    <operation>OR</operation>
</FilterRequest>

```

Example 6 - operatingSystem.category1:Mac` and hardware.category:Notebook

Request Body in XML:

```

<FilterRequest>
    <filters>
        <Criteria field="operatingSystem.category1"
operator="EQUALS">
            <value>Mac</value>

```

```
</Criteria>  
<Criteria field="hardware.category" operator="EQUALS">  
  <value>Notebook</value>  
</Criteria>  
</filters>  
<operation>AND</operation>  
</FilterRequest>
```