Qualys Cloud Platform v3.x

API Release Notes

Version 3.14

January 31, 2023

Qualys Cloud Suite API gives you many ways to integrate your programs and API calls with Qualys capabilities. You'll find all the details in our user guides, available at the time of release. Just log in to your Qualys account and go to Help > Resources.

What's New

AM API: Dynamic Tag Rule using Global Asset View Tag Rule Engine

AM API: Enhanced NETWORK_RANGE Dynamic Tag Rule Engine

AM API: New Tracking Method for Assets

AM API: New Tracking Method for HostAssets

AM API: Removal of Restrictions on External Id for AWS Connectors

AM API: Custom Asset Attributes

CA API: Fetch Installer Binary Information for Cloud Agent Linux on zSystems

CA API: Download Installer Binary for Cloud Agent Linux on zSystems

CA API: Launch On Demand Scan

URL to the Qualys API Server

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.

Qualys Cloud Platform 3.14 brings you many more API improvements and updates!

Issues Addressed

AM API: Dynamic Tag Rule using Global Asset View Tag Rule Engine

With this release, you can now create and update dynamic tag rule using GLOBAL_ASSET_VIEW tag rule engine. This also includes the support to all CRUD operations of tag API, such as, create, update, delete, search and count.

Create a Dynamic Tag

The following API creates dynamic tag using GLOBAL_ASSET_VIEW tag rule engine:

API affected	/qps/rest/2.0/create/am/tag
New or Updated APIs	Updated
DTD or XSD changes	Yes

Sample - Create a dynamic tag using rule engine GLOBAL_ASSET_VIEW

API request:

```
curl --location --request POST
'https://qualysapi.qualys.com/qps/rest/2.0/create/am/tag' \
--header 'Authorization: Basic cXVheXNfY2YyOlFhdGVtcEAxMjM=' \
--header 'Content-Type: application/xml' \
--data-raw '<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
  <data>
    <Tag>
      <name>Create_Tag_OperatingSystemLifecycleStageEOL1</name>
       <ruleText>operatingSystem.lifecycle.stage:`EOL`</ruleText>
       <ruleType>GLOBAL_ASSET_VIEW</ruleType>
    </Tag>
  </data>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/tag.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <Tag>
            <id>22450446</id>
            <name>Create_Tag_OperatingSystemLifecycleStageEOL1</name>
            <created>2022-12-15T05:13:57Z</created>
```

```
            <modified>2022-12-15T05:13:57Z</modified>
            <ruleText>operatingSystem.lifecycle.stage:`EOL`</ruleText>
            <ruleType>GLOBAL_ASSET_VIEW</ruleType>
        </Tag>
    </data>
</ServiceResponse>
```

Update a Dynamic Tag

The following API updates the dynamic tag using GLOBAL_ASSET_VIEW tag rule engine:

API affected	/qps/rest/2.0/update/am/tag
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	No

Sample - Update a dynamic tag using rule engine GLOBAL_ASSET_VIEW

API request:

```
https://qualysapi.qualys.com/qps/rest/2.0/update/am/tag/22446888
curl --location --request POST
'https://qualysapi.qualys.com/qps/rest/2.0/update/am/tag/22446888' \
--header 'Authorization: Basic cXVheXNfY2YyOlFhdGVtcEAxMjM=' \
--header 'Content-Type: application/xml' \
--data-raw '<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
  <data>
    <Tag>
       <ruleText>operatingSystem.name:"Linux"</ruleText>
       <ruleType>GLOBAL_ASSET_VIEW</ruleType>
    </Tag>
  </data>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/tag.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <Tag>
            <id>22446888</id>
        </Tag>
    </data>
</ServiceResponse>
```

AM API: Enhanced NETWORK_RANGE Dynamic Tag Rule Engine

With this release, we have enhanced NETWORK_RANGE Dynamic Tag Rule engine. The saving tag rules is optimized for the Network Range engine. All individual IP addresses added by the user now gets converted as an IP address range, if the IPs are in sequence.

Note:Adding duplicate IP has been discontinued. Hence, if a user enters duplicate IP addresses, only one IP address instance is considered.

For example, if a user adds 10.0.0.1, 10.0.0.2, 10.0.0.3, 10.0.0.4, the API will convert the IP list into a range from 10.0.0.1-10.0.0.4.

This also includes the support to all CRUD operations of tag API, such as, create, update, delete, search and count.

CREATE Dynamic Tag

The following API creates the dynamic tag using rule engine NETWORK_RANGE. The API disallows duplicate IP or IP ranges and converts subnet or single IPs into an IP range if it is in the same range.

API affected	/qps/rest/2.0/create/am/tag
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	No

Sample - Create a dynamic tag using rule engine NETWORK_RANGE

API request:

```
curl --location --request POST
'https://qualysapi.qualys.com/qps/rest/2.0/create/am/tag' \
--header 'Authorization: Basic cXVheXNfeXgxNjpRdWFseXNAMTIzNA==' \
--header 'Content-Type: application/xml' \
--data-raw '<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
  <data>
    <Tag>
       <name>TestNetworkRange1</name>
<ruleText>10.0.0.0,10.0.0.1,10.0.0.2,10.0.0.3,10.0.0.4,10.0.0.5,10.200.0.
20,10.15.0.5,10.15.0.6,10.15.0.7,10.15.0.8,10.15.0.9,</ruleText>
       <ruleType>NETWORK_RANGE</ruleType>
    </Tag>
  </data>
</ServiceRequest>'
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/tag.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <Tag>
            <id>22557965</id>
            <name>TestNetworkRange1</name>
            <created>2022-12-20T07:13:00Z</created>
            <modified>2022-12-20T07:13:00Z</modified>
            <ruleText>10.0.0.0-10.0.0.5,10.15.0.5-
10.15.0.9,10.200.0.20</ruleText>
            <ruleType>NETWORK_RANGE</ruleType>
        </Tag>
    </data>
</ServiceResponse>
```

UPDATE Dynamic Tag

The following API updates the dynamic tag using rule engine NETWORK_RANGE. The API disallows duplicate IP or IP ranges and convert subnet or single IPs into an IP range if it falls in the same range.

API affected	/qps/rest/2.0/update/am/tag
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	No

Sample - Update a dynamic tag using rule engine NETWORK_RANGE

API request:

```
curl --location --request POST
'https://qualysapi.qualys.com/qps/rest/2.0/update/am/tag/22559762' \
--header 'Authorization: Basic cXVheXNfeXgxNjpRdWFseXNAMTIzNA==' \
--header 'Content-Type: application/xml' \
--data-raw '<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
  <data>
    <Tag>
<ruleText>10.0.0.0,10.0.0.1,10.0.0.2,10.0.0.3,10.0.0.4,10.0.0.5,10.15.0.5
,10.15.0.6,10.15.0.7,10.15.0.8,10.15.0.9,</ruleText>
       <ruleType>NETWORK_RANGE</ruleType>
```

```
    </Tag>
  </data>
</ServiceRequest>'
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/tag.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <Tag>
            <id>22559762</id>
        </Tag>
    </data>
</ServiceResponse>
```

AM API: New Tracking Method for Assets

With this release, you can filter the tracking method for the assets using the following APIs:

SEARCH Asset

API affected	/qps/rest/2.0/search/am/asset
New or Updated APIs	Updated
Operator	GET
DTD or XSD changes	Yes

Sample - SEARCH Asset

API request:

```
curl --location --request POST
'https://qualysapi.qualys.com/qps/rest/2.0/search/am/asset/' \
--header 'Authorization: Basic cXVheXNfY2YyOlFhdGVtcEAxMjM=' \
--header 'Content-Type: application/xml' \
--data-raw '
<ServiceRequest>
<filters>
<Criteria field="id" operator="EQUALS">
19059383</Criteria>
</filters>
</ServiceRequest> '
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/asset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <hasMoreRecords>false</hasMoreRecords>
    <data>
        <Asset>
            <id>19059383</id>
            <name>teams-test</name>
            <created>2022-12-14T13:40:18Z</created>
            <modified>2022-12-14T16:34:34Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
```

```
                        <id>XXXXXXXX</id>
                        <name>reeval-asset.isContainerHost:false</name>
                    </TagSimple>
                </list>
            </tags>
            <criticalityScore>5</criticalityScore>
        </Asset>
    </data>
</ServiceResponse>
```

GET Asset

API affected	/qps/rest/2.0/get/am/asset/
New or Updated APIs	Updated
Operator	GET
DTD or XSD changes	Yes

Sample - GET Asset

API request:

```
curl --location --request GET
'https://qualysapi.qualys.com/qps/rest/2.0/get/am/asset/19059383' \
--header 'Authorization: Basic cXVheXNfY2YyOlFhdGVtcEAxMjM='
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/asset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <Asset>
            <id>XXXXXXXX</id>
            <name>teams-test</name>
            <created>2022-12-14T13:40:18Z</created>
            <modified>2022-12-14T16:34:34Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
                        <id>XXXXXXXX</id>
                        <name>reeval-asset.isContainerHost:false</name>
                    </TagSimple
</list>
            </tags>
```

```
            <criticalityScore>5</criticalityScore>
        </Asset>
    </data>
</ServiceResponse>
```

UPDATE Asset

API affected	/qps/rest/2.0/update/am/asset/
New or Updated APIs	Updated
Operator	GET
DTD or XSD changes	Yes

Sample - UPDATE Asset

API request:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <filters>
        <Criteria field="id" operator="EQUALS">XXXXXXXX
</Criteria>
    </filters>
    <data>
        <Asset>
            <tags>
                <add>
                    <TagSimple>
                        <id>XXXXXXXXX</id>
                    </TagSimple>
                </add>
            </tags>
        </Asset>
    </data>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/asset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <Asset>
            <id>XXXXXXXX</id>
        </Asset>
    </data>
```

```
    </ServiceResponse>
```

XSD Response:

```
    <?xml version="1.0" encoding="UTF-8"?>
    <schema xmlns="http://www.w3.org/2001/XMLSchema"
          targetNamespace="http://api.portal.qualys.com/v2"
          xmlns:tns="http://api.portal.qualys.com/v2"
          xmlns:common="http://api.portal.qualys.com/common"
          elementFormDefault="qualified">

       <include schemaLocation="asset.xsd" />
       <include schemaLocation="asset_common.xsd" />
       <include schemaLocation="agent_source.xsd" />

       <import namespace="http://api.portal.qualys.com/common"
    schemaLocation="http://api.portal.qualys.com/common/qualys_common.xsd" />

       <simpleType name="AssetTrackingMethod">
          <restriction base="string">
             <enumeration value="PASSIVE_SCANNER" />
             <enumeration value="GCP_INSTANCE_ID" />
             <enumeration value="SHODAN" />
             <enumeration value="PASSIVE_SENSOR" />
             <enumeration value="EASM" />
             <enumeration value="ICS_OCA" />
             <enumeration value="SERVICE_NOW" />
             <enumeration value="ACTIVE_DIRECTORY" />
             <enumeration value="WEBHOOK" />
          </restriction>
       </simpleType>
       <complexType name="HostAssetOpenPort">
          <sequence>
             <element name="port" type="integer" />
             <element name="protocol" minOccurs="0" type="tns:Protocol"/>
           </sequence>
       </complexType>
        <complexType name="HostAssetOpenPortQList">
            <sequence>
               <element name="count" type="int" maxOccurs="1" minOccurs="0"/>
            </sequence>
        </complexType>
    ...
           <complexType name="HostAssetSoftware">
          <sequence>
             <element name="name" type="string" />
             <element name="version" type="string" default="unkown" />
          </sequence>
       </complexType>
     </schema>
```

AM API: New Tracking Method for HostAssets

With this release, we have introduced new tracking methods such as WEBHOOK, SERVICE_NOW, and ACTIVE_DIRECTORY for host assets. Similar to existing tracking methods, you can filter the host assets based on these new tracking methods.

SEARCH HostAsset

API affected	/qps/rest/2.0/search/am/hostasset
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	Yes

Sample - SEARCH HostAsset using WEBHOOK tracking method

API request:

```
curl --location --request POST
'https://qualysapi.qualys.com/qps/rest/2.0/search/am/hostasset/' \
--header 'Authorization: Basic cXVheXNfY2YyOlFhdGVtcEAxMjM=' \
--header 'Content-Type: application/xml' \
--data-raw '<ServiceRequest>
    <filters>
        <Criteria field="trackingMethod"
operator="EQUALS">WEBHOOK</Criteria>
    </filters>
</ServiceRequest>'
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/hostasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <hasMoreRecords>false</hasMoreRecords>
    <data>
        <HostAsset>
            <id>XXXXXXXX</id>
            <name>teams-test</name>
            <created>2022-12-14T13:40:18Z</created>
            <modified>2022-12-14T16:34:34Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
```

```
            <id>XXXXXXXX</id>
            <name>reeval-asset.isContainerHost:false</name>
        </TagSimple>
        <TagSimple>
            <id>XXXXXXXX</id>
            <name>Ani-All-AG-BU</name>
        </TagSimple>
    </list>
</tags>
<criticalityScore>5</criticalityScore>
<qwebHostId>3120230</qwebHostId>
<lastVulnScan>2022-04-02T00:39:36Z</lastVulnScan>
<lastSystemBoot>2022-03-24T17:23:37Z</lastSystemBoot>
<lastLoggedOnUser>US\t0031289</lastLoggedOnUser>
<fqdn>teams-test</fqdn>
<os>Windows 10 Pro 64 bit Edition Version 21H2 UBR 1586</os>
<dnsHostName>teams-test</dnsHostName>
<netbiosName>C237288</netbiosName>
<address>10.0.0.3</address>
<trackingMethod>WEBHOOK</trackingMethod>
<model>Latitude 5410</model>
<totalMemory>15980</totalMemory>
<biosDescription>Dell Inc. 1.2.16</biosDescription>
<openPort>
    <list>
        <HostAssetOpenPort>
            <port>57153</port>
            <protocol>UDP</protocol>
            <serviceName>TEAMS.EXE</serviceName>
        </HostAssetOpenPort>
        <HostAssetOpenPort>
            <port>53634</port>
            <protocol>UDP</protocol>
            <serviceName>SSDP DISCOVERY</serviceName>
        </HostAssetOpenPort>
    </list>
</openPort>
<software>
    <list>
        <HostAssetSoftware>
            <name>PuTTY release 0.76 (64-bit)</name>
            <version>0.76.0.0</version>
        </HostAssetSoftware>
        <HostAssetSoftware>
            <name>Mitel Connect</name>
            <version>214.100.1223.0</version>
        </HostAssetSoftware>
    </list>
</software>
```

```
            <vuln>
                <list>
                    <HostAssetVuln>
                        <qid>105241</qid>
                       <hostInstanceVulnId>175973706</hostInstanceVulnId>
                        <firstFound>2020-09-09T21:11:32Z</firstFound>
                        <lastFound>2022-04-02T00:39:36Z</lastFound>
                    </HostAssetVuln>
                    <HostAssetVuln>
                        <qid>45063</qid>
                       <hostInstanceVulnId>175973709</hostInstanceVulnId>
                        <firstFound>2020-09-09T21:11:32Z</firstFound>
                        <lastFound>2022-04-02T00:39:36Z</lastFound>
                    </HostAssetVuln>
                </list>
            </vuln>
            <processor>
                <list>
                    <HostAssetProcessor>
                       <name>Intel64 Family 6 Model 142 Stepping 12</name>
                    </HostAssetProcessor>
                    <HostAssetProcessor>
                       <name>Intel64 Family 6 Model 142 Stepping 12</name>
                    </HostAssetProcessor>
                </list>
            </processor>
            <networkInterface>
                <list>
                    <HostAssetInterface>
                        <hostname>teams-test</hostname>
                        <interfaceName>Intel(R) Wi-Fi 6 AX201
160MHz</interfaceName>
                        <macAddress>CC:D9:AC:B9:CC:CE</macAddress>
                        <address>1.2.3.4</address>
                        <gatewayAddress>1.0.0.1</gatewayAddress>
                    </HostAssetInterface>
                    <HostAssetInterface>
                        <hostname>teams-test</hostname>
                        <interfaceName>Cisco AnyConnect Secure Mobility
Client Virtual Miniport Adapter for Windows x64</interfaceName>
                        <macAddress>00:05:00:3O:7A:00</macAddress>
                        <address>1.2.3.4</address>
                    </HostAssetInterface>
                </list>
            </networkInterface>
            <isDockerHost>false</isDockerHost>
        </HostAsset>
    </data>
</ServiceResponse>
```

Sample - SEARCH HostAsset using ACTIVE_DIRECTORY tracking method

API request:

```
<ServiceRequest>
    <filters>
        <Criteria field="trackingMethod"
operator="EQUALS">ACTIVE_DIRECTORY</Criteria>
    </filters>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/hostasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <hasMoreRecords>false</hasMoreRecords>
    <data>
        <HostAsset>
            <id>XXXXXXXX</id>
            <name>debian9</name>
            <created>2021-01-22T11:05:10Z</created>
            <modified>2022-12-16T11:45:39Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
                        <id>XXXXXXXX</id>
                        <name>XXXX</name>
                    </TagSimple>
                    <TagSimple>
                        <id>XXXXXXXX</id>
                        <name>XXXXX</name>
                    </TagSimple>
                </list>
            </tags>
            <criticalityScore>4</criticalityScore>
            <qwebHostId>XXXXXXX</qwebHostId>
            <lastVulnScan>2022-12-16T11:45:44Z</lastVulnScan>
            <vulnsUpdated>2022-12-16T11:45:31Z</vulnsUpdated>
            <informationGatheredUpdated>2022-12-
16T11:45:31Z</informationGatheredUpdated>
            <lastSystemBoot>2021-01-19T12:17:50Z</lastSystemBoot>
            <lastLoggedOnUser>root</lastLoggedOnUser>
            <fqdn>debian9</fqdn>
```

```
            <os>Debian Linux 9.1</os>
            <dnsHostName>debian9</dnsHostName>
            <networkGuid>6b48277c-0742-61c1-82bb-
cac0f9c4094a</networkGuid>
            <address>1.2.3.4</address>
            <trackingMethod>ACTIVE_DIRECTORY</trackingMethod>
            <manufacturer>ABC Inc.</manufacturer>
            <model>Virtual Platform</model>
            <totalMemory>3013</totalMemory>
            <timezone>-08:00</timezone>
            <biosDescription>description of bios</biosDescription>
            <openPort>
                <list>
                    <HostAssetOpenPort>
                        <port>22</port>
                        <protocol>TCP</protocol>
                       <serviceName>secure shell (ssh) server, for secure
access from remote machines</serviceName>
                    </HostAssetOpenPort>
                </list>
            </openPort>
            <software>
                <list>
                    <HostAssetSoftware>
                        <name>geoip-database</name>
                        <version>20170512-1</version>
                    </HostAssetSoftware>
                    <HostAssetSoftware>
                        <name>libgxps2:amd64</name>
                        <version>0.2.4-1+b1</version>
                    </HostAssetSoftware>
                </list>
            </software>
            <vuln>
                <list>
                    <HostAssetVuln>
                        <qid>180928</qid>
                       <hostInstanceVulnId>173444376</hostInstanceVulnId>
                        <firstFound>2022-08-11T07:20:34Z</firstFound>
                        <lastFound>2022-12-16T11:45:44Z</lastFound>
                    </HostAssetVuln>
                    <HostAssetVuln>
                        <qid>178887</qid>
                       <hostInstanceVulnId>171319854</hostInstanceVulnId>
                        <firstFound>2022-05-09T10:59:03Z</firstFound>
                        <lastFound>2022-12-16T11:45:44Z</lastFound>
                    </HostAssetVuln>
                </list>
            </vuln>
```

```
            <processor>
                <list>
                    <HostAssetProcessor>
                        <name>Intel(R) Xeon(R)</name>
                        <speed>2300</speed>
                    </HostAssetProcessor>
                </list>
            </processor>
            <volume>
                <list>
                    <HostAssetVolume>
                        <name>/sys/fs/cgroup</name>
                        <size>1579454464</size>
                        <free>1579454464</free>
                    </HostAssetVolume>
                    <HostAssetVolume>
                        <name>/home</name>
                        <size>2717941760</size>
                        <free>2198523904</free>
                    </HostAssetVolume>
                </list>
            </volume>
            <account>
                <list>
                    <HostAssetAccount>
                        <username>root</username>
                    </HostAssetAccount>
                    <HostAssetAccount>
                        <username>qualys</username>
                    </HostAssetAccount>
                </list>
            </account>
            <networkInterface>
                <list>
                    <HostAssetInterface>
                        <hostname>debian9</hostname>
                        <interfaceName>ens32</interfaceName>
                        <macAddress>00:50:56:aa:06:59</macAddress>
                        <address>fe80:0:0:0:250:56ff:feaa:659</address>
                        <gatewayAddress>1.1.1.1</gatewayAddress>
                    </HostAssetInterface>
                </list>
            </networkInterface>
            <isDockerHost>false</isDockerHost>
        </HostAsset>
    </data>
</ServiceResponse>
```

GET HostAsset

API affected	/qps/rest/2.0/get/am/hostasset
New or Updated APIs	Updated
Operator	GET
DTD or XSD changes	Yes

Sample - GET HostAsset using WEBHOOK tracking method

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/hostasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <HostAsset>
            <id>XXXXXXXX</id>
            <name>teams-test</name>
            <created>2022-12-14T13:40:18Z</created>
            <modified>2022-12-14T16:34:34Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
                        <id>XXXXXXXX</id>
                        <name>reeval-asset.isContainerHost:false</name>
                    </TagSimple>
                    <TagSimple>
                        <id>19213462</id>
                        <name>Ani-All-AG-BU</name>
                    </TagSimple>
                </list>
            </tags>
            <criticalityScore>5</criticalityScore>
            <qwebHostId>3120230</qwebHostId>
            <lastVulnScan>2022-04-02T00:39:36Z</lastVulnScan>
            <lastSystemBoot>2022-03-24T17:23:37Z</lastSystemBoot>
            <lastLoggedOnUser>US\t0031289</lastLoggedOnUser>
            <os>Windows 10 Pro 64 bit Edition Version 21H2 UBR 1586</os>
            <dnsHostName>teams-test</dnsHostName>
            <netbiosName>C237288</netbiosName>
            <address>1.0.0.0</address>
            <trackingMethod>WEBHOOK</trackingMethod>
            <model>Latitude 5410</model>
```

```
            <totalMemory>15980</totalMemory>
            <biosDescription>description of bios</biosDescription>
            <openPort>
                <list>
                    <HostAssetOpenPort>
                        <port>57153</port>
                        <protocol>UDP</protocol>
                        <serviceName>TEAMS.EXE</serviceName>
                    </HostAssetOpenPort>
                    <HostAssetOpenPort>
                        <port>53634</port>
                        <protocol>UDP</protocol>
                        <serviceName>SSDP DISCOVERY</serviceName>
                    </HostAssetOpenPort>
                </list>
            </software>
            <vuln>
                <list>
                    <HostAssetVuln>
                        <qid>105241</qid>
                       <hostInstanceVulnId>175973706</hostInstanceVulnId>
                        <firstFound>2020-09-09T21:11:32Z</firstFound>
                        <lastFound>2022-04-02T00:39:36Z</lastFound>
                    </HostAssetVuln>
                    <HostAssetVuln>
                        <qid>45063</qid>
                       <hostInstanceVulnId>175973709</hostInstanceVulnId>
                        <firstFound>2020-09-09T21:11:32Z</firstFound>
                        <lastFound>2022-04-02T00:39:36Z</lastFound>
                    </HostAssetVuln>
                </list>
            </vuln>
            <processor>
                <list>
                    <HostAssetProcessor>
                        <name>  Intel64 Family 6 Model 142 Stepping
12</name>
                    </HostAssetProcessor>
                    <HostAssetProcessor>
                        <name>  Intel64 Family 6 Model 142 Stepping
12</name>
                    </HostAssetProcessor>
                </list>
            </processor>
            <networkInterface>
                <list>
                    <HostAssetInterface>
                        <hostname>teams-test</hostname>
                        <interfaceName>Intel(R) Wi-Fi 6 AX201
```

```
160MHz</interfaceName>
                        <macAddress>CC:D9:AC:B9:CC:CE</macAddress>
                        <address>1.2.3.4</address>
                        <gatewayAddress>1.0.0.0</gatewayAddress>
                    </HostAssetInterface>
                </list>
            </networkInterface>
            <isDockerHost>false</isDockerHost>
        </HostAsset>
    </data>
</ServiceResponse>
```

Sample - GET HostAsset using SERVICE_NOW tracking method

Endpoint:

```
/qps/rest/2.0/get/am/hostasset/<Asset ID>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/hostasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <HostAsset>
            <id>7626816</id>
            <name>debian9</name>
            <created>2021-01-22T11:05:10Z</created>
            <modified>2022-12-16T11:45:39Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
                        <id>15763616</id>
                        <name>test1</name>
                    </TagSimple>
                    <TagSimple>
                        <id>16466862</id>
                        <name>5555</name>
                    </TagSimple>
              </list>
            </tags>
            <criticalityScore>4</criticalityScore>
            <qwebHostId>1537137</qwebHostId>
            <lastVulnScan>2022-12-16T11:45:44Z</lastVulnScan>
            <vulnsUpdated>2022-12-16T11:45:31Z</vulnsUpdated>
```

```
            <informationGatheredUpdated>2022-12-
16T11:45:31Z</informationGatheredUpdated>
            <lastSystemBoot>2021-01-19T12:17:50Z</lastSystemBoot>
            <lastLoggedOnUser>root</lastLoggedOnUser>
            <os>Debian Linux 9.1</os>
            <dnsHostName>debian9</dnsHostName>
            <networkGuid>6b48277c-0742-61c1-82bb-
cac0f9c4094a</networkGuid>
            <address>1.1.1.1</address>
            <trackingMethod>SERVICE_NOW</trackingMethod>
            <manufacturer>ABC, Inc.</manufacturer>
            <model>Virtual Platform</model>
            <totalMemory>3013</totalMemory>
            <timezone>-08:00</timezone>
            <biosDescription>description of bios</biosDescription>
            <openPort>
                <list>
                    <HostAssetOpenPort>
                        <port>22</port>
                        <protocol>TCP</protocol>
                       <serviceName>secure shell (ssh) server, for secure
access from remote machines</serviceName>
                    </HostAssetOpenPort>
                </list>
            </openPort>
            <software>
                <list>
                    <HostAssetSoftware>
                        <name>geoip-database</name>
                        <version>20170512-1</version>
                    </HostAssetSoftware>
                    <HostAssetSoftware>
                        <name>libgxps2:amd64</name>
                        <version>0.2.4-1+b1</version>
                    </HostAssetSoftware>
                </list>
            </software>
            <vuln>
                <list>
                    <HostAssetVuln>
                        <qid>180928</qid>
                       <hostInstanceVulnId>173444376</hostInstanceVulnId>
                        <firstFound>2022-08-11T07:20:34Z</firstFound>
                        <lastFound>2022-12-16T11:45:44Z</lastFound>
                    </HostAssetVuln>
                    <HostAssetVuln>
                        <qid>178887</qid>
                       <hostInstanceVulnId>171319854</hostInstanceVulnId>
                        <firstFound>2022-05-09T10:59:03Z</firstFound>
```

```
            <lastFound>2022-12-16T11:45:44Z</lastFound>
        </HostAssetVuln>
        <HostAssetVuln>
            <qid>179184</qid>
           <hostInstanceVulnId>171319869</hostInstanceVulnId>
            <firstFound>2022-05-09T10:59:03Z</firstFound>
            <lastFound>2022-12-16T11:45:44Z</lastFound>
        </HostAssetVuln>
    </list>
</vuln>
<processor>
    <list>
        <HostAssetProcessor>
            <name>Intel(R) Xeon(R)</name>
            <speed>2300</speed>
        </HostAssetProcessor>
    </list>
</processor>
<volume>
    <list>
        <HostAssetVolume>
            <name>/sys/fs/cgroup</name>
            <size>1579454464</size>
            <free>1579454464</free>
        </HostAssetVolume>
        <HostAssetVolume>
            <name>/home</name>
            <size>2717941760</size>
            <free>2198523904</free>
        </HostAssetVolume>
    </list>
</volume>
<account>
    <list>
        <HostAssetAccount>
            <username>root</username>
        </HostAssetAccount>
    </list>
</account>
<networkInterface>
    <list>
        <HostAssetInterface>
            <hostname>debian9</hostname>
            <interfaceName>ens32</interfaceName>
            <macAddress>00:50:56:aa:06:59</macAddress>
            <address>fe80:0:0:0:250:56ff:feaa:659</address>
            <gatewayAddress>1.1.1.1</gatewayAddress>
        </HostAssetInterface>
    </list>
```

```
            </networkInterface>
            <isDockerHost>false</isDockerHost>
        </HostAsset>
    </data>
</ServiceResponse>
```

Sample - GET HostAsset using ACTIVE_DIRECTORY tracking method

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/hostasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <HostAsset>
            <id>7626816</id>
            <name>debian9</name>
            <created>2021-01-22T11:05:10Z</created>
            <modified>2022-12-16T11:45:39Z</modified>
            <type>HOST</type>
            <tags>
                <list>
                    <TagSimple>
                        <id>15763616</id>
                        <name>test1</name>
                    </TagSimple>
                    <TagSimple>
                        <id>16466862</id>
                        <name>5555</name>
                </list>
            </tags>
            <criticalityScore>4</criticalityScore>
            <qwebHostId>1537137</qwebHostId>
            <lastVulnScan>2022-12-16T11:45:44Z</lastVulnScan>
            <vulnsUpdated>2022-12-16T11:45:31Z</vulnsUpdated>
            <informationGatheredUpdated>2022-12-
16T11:45:31Z</informationGatheredUpdated>
            <lastSystemBoot>2021-01-19T12:17:50Z</lastSystemBoot>
            <lastLoggedOnUser>root</lastLoggedOnUser>
            <os>Debian Linux 9.1</os>
            <dnsHostName>debian9</dnsHostName>
            <networkGuid>6b48277c-0742-61c1-82bb-
cac0f9c4094a</networkGuid>
            <address>1.1.1.1</address>
            <trackingMethod>ACTIVE_DIRECTORY</trackingMethod>
            <manufacturer>ABC, Inc.</manufacturer>
            <model>Virtual Platform</model>
```

```
            <totalMemory>3013</totalMemory>
            <timezone>-08:00</timezone>
            <biosDescription>bios description</biosDescription>
            <openPort>
                <list>
                    <HostAssetOpenPort>
                        <port>22</port>
                        <protocol>TCP</protocol>
                       <serviceName>secure shell (ssh) server, for secure
access from remote machines</serviceName>
                    </HostAssetOpenPort>
                </list>
            </openPort>
            <software>
                <list>
                    <HostAssetSoftware>
                        <name>geoip-database</name>
                        <version>20170512-1</version>
                    </HostAssetSoftware>
                    <HostAssetSoftware>
                        <name>libgxps2:amd64</name>
                        <version>0.2.4-1+b1</version>
                    </HostAssetSoftware>
                </list>
            </software>
            <vuln>
                <list>
                    <HostAssetVuln>
                        <qid>180928</qid>
                       <hostInstanceVulnId>173444376</hostInstanceVulnId>
                        <firstFound>2022-08-11T07:20:34Z</firstFound>
                        <lastFound>2022-12-16T11:45:44Z</lastFound>
                    </HostAssetVuln>
                    <HostAssetVuln>
                        <qid>178887</qid>
                       <hostInstanceVulnId>171319854</hostInstanceVulnId>
                        <firstFound>2022-05-09T10:59:03Z</firstFound>
                        <lastFound>2022-12-16T11:45:44Z</lastFound>
                    </HostAssetVuln>
                </list>
            </vuln>
            <processor>
                <list>
                    <HostAssetProcessor>
                        <name>Intel(R) Xeon(R)</name>
                        <speed>2300</speed>
                    </HostAssetProcessor>
                </list>
            </processor>
```

```
            <volume>
                <list>
                    <HostAssetVolume>
                        <name>/sys/fs/cgroup</name>
                        <size>1579454464</size>
                        <free>1579454464</free>
                    </HostAssetVolume>
                </list>
            </volume>
            <account>
                <list>
                    <HostAssetAccount>
                        <username>root</username>
                    </HostAssetAccount>
                 </list>
            </account>
            <networkInterface>
                <list>
                    <HostAssetInterface>
                        <hostname>debian9</hostname>
                        <interfaceName>ens32</interfaceName>
                        <macAddress>00:50:56:aa:06:59</macAddress>
                        <address>fe80:0:0:0:250:56ff:feaa:659</address>
                        <gatewayAddress>1.1.1.1</gatewayAddress>
                    </HostAssetInterface>
                </list>
            </networkInterface>
            <isDockerHost>false</isDockerHost>
        </HostAsset>
    </data>
</ServiceResponse>
```

UPDATE HostAsset

API affected	/qps/rest/2.0/update/am/hostasset
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	Yes

Sample - UPDATE HostAsset

API request:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <filters>
        <Criteria field="id" operator="IN">19059383
</Criteria>
    </filters>
    <data>
        <HostAsset>
            <tags>
                <add>
                    <TagSimple>
                        <id>87832867</id>
                    </TagSimple>
                </add>
            </tags>
        </HostAsset>
    </data>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/hostasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <HostAsset>
            <id>19059383</id>
        </HostAsset>
    </data>
</ServiceResponse>
```

XSD Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
      targetNamespace="http://api.portal.qualys.com/v2"
      xmlns:tns="http://api.portal.qualys.com/v2"
      xmlns:common="http://api.portal.qualys.com/common"
      elementFormDefault="qualified">

   <include schemaLocation="asset.xsd" />
   <include schemaLocation="asset_common.xsd" />
   <include schemaLocation="agent_source.xsd" />

   <import namespace="http://api.portal.qualys.com/common"
schemaLocation="http://api.portal.qualys.com/common/qualys_common.xsd" />

   <simpleType name="AssetTrackingMethod">
      <restriction base="string">
...
         <enumeration value="PASSIVE_SCANNER" />
         <enumeration value="GCP_INSTANCE_ID" />
         <enumeration value="SHODAN" />
         <enumeration value="PASSIVE_SENSOR" />
         <enumeration value="EASM" />
         <enumeration value="ICS_OCA" />
         <enumeration value="SERVICE_NOW" />
         <enumeration value="ACTIVE_DIRECTORY" />
         <enumeration value="WEBHOOK" />
      </restriction>
   </simpleType>
   <complexType name="HostAssetOpenPort">
      <sequence>
         <element name="port" type="integer" />
         <element name="protocol" minOccurs="0" type="tns:Protocol"/>
       </sequence>
   </complexType>
    <complexType name="HostAssetOpenPortQList">
        <sequence>
           <element name="count" type="int" maxOccurs="1" minOccurs="0"/>
         </sequence>
    </complexType>
...
        <complexType name="HostAssetSoftware">
      <sequence>
         <element name="name" type="string" />
         <element name="version" type="string" default="unkown" />
      </sequence>
   </complexType>
 </schema>
```

AM API: Removal of Restrictions on External Id for AWS Connectors

API affected	/qps/rest/2.0/create/am/awsassetdataconnector /qps/rest/2.0/update/am/awsassetdataconnector /qps/rest/2.0/update/am/awsassetdataconnector/<id> /qps/rest/3.0/create/am/awsassetdataconnector /qps/rest/3.0/update/am/awsassetdataconnector /qps/rest/3.0/update/am/awsassetdataconnector/<id>
New or Updated APIs	Updated
DTD or XSD changes	No

We will now support creation and updation of AWS connectors using V2 or V3 APIs for AssetView with all external ID formats. We have removed the validation for External Id format check and the AWS connector can be created using alphanumeric external Id formats.

We have retained the following validations:

- External Id length should be at least 2 characters.
- External Id length should not exceed 1024 characters.
- No space should be present in between external Id string.

AM API: Custom Asset Attributes

With this release, a new field “customAttributes” is added to the API response.

Prerequisite:

CSAM subscription

UPDATE Asset using Custom Attributes

API affected	/qps/rest/2.0/update/am/asset
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	Yes

Sample - UPDATE Asset using Custom Attribute

API Request:

```
curl -u "USERNAME:PASSWORD" -H "Content-type: text/xml" -X "POST" -d
"https://qualysapi.qualys.com/qps/rest/2.0/update/am/asset" < file.xml

Note: “file.xml” contains the request POST data.

<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
     <filters>
          <Criteria field="id" operator="EQUALS">XXXXXXXXX</Criteria>
     </filters>
     <data>
          <Asset>
               <customAttributes>
                    <add>
                         <CustomAttribute>
                              <key>department</key>
                              <value>Engineering</value>
                         </CustomAttribute>
                    </add>
               </customAttributes>
          </Asset>
     </data>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<ServiceResponse
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/asset.xsd">
     <responseCode>SUCCESS</responseCode>
     <count>1</count>
     <data>
          <Asset>
               <id>XXXXXXXXX</id>
          </Asset>
     </data>
</ServiceResponse>
```

GET Asset using Custom Attribute

API affected	/qps/rest/2.0/get/am/asset
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	Yes

Sample - GET Asset using Custom Attribute

API Request:

```
curl -u "USERNAME:PASSWORD" -H "Content-type: text/xml" -X "GET"
"https://qualysapi.qualys.com/qps/rest/2.0/get/am/as/XXXXXXXXX"
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/asset.xsd">
     <responseCode>SUCCESS</responseCode>
     <count>1</count>
     <data>
     <Asset>
          <id>XXXXXXXXX</id>
          <name>test1</name>
          <created>2022-10-20T08:24:41Z</created>
          <modified>2023-01-16T22:18:58Z</modified>
          <type>HOST</type>
          <tags>
     <list>
     <TagSimple>
          <id>XXXXXXXXX</id>
```

```
          <name>update-ats-847-specif-ag-bu</name>
     </TagSimple>
     </list>
          </tags>
          <customAttributes>
     <list>
     <CustomAttribute>
          <key>department</key>
          <value>Engineering</value>
     </CustomAttribute>
     </list>
          </customAttributes>
          <sourceInfo>
     <list>
     <AssetSource/>
     <AzureAssetSourceSimple>
          <assetId>XXXXXXXXX</assetId>
          <type>AZURE</type>
          <firstDiscovered>2022-10-20T08:24:41Z</firstDiscovered>
          <lastUpdated>2023-01-17T05:20:11Z</lastUpdated>
          <name>test1</name>
          <location>west2</location>
          <vmSize>Standard_B1ls</vmSize>
          <vmId>xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx</vmId>
          <offer>0001-com-ubuntu-server-focal</offer>
          <state>DEALLOCATED</state>
          <publisher>canonical</publisher>
          <version>latest</version>
          <osType>Linux</osType>
          <subnet>/subscriptions/xxxxxxxx-xxxx-xxxx-xxxx-
xxxxxxxxxxxx/resourceGroups/cvsignaturetest/providers/Microsoft.Network/v
irtualNetworks/network-test1/subnets/default</subnet>
          <subscriptionId>xxxxxxxx-xxxx-xxxx-xxxx-
xxxxxxxxxxxx</subscriptionId>
          <resourceGroupName>cvsignature-test</resourceGroupName>
          <macAddress>xx-xx-xx-xx-xx-xx</macAddress>
          <publicIpAddress>xx.xx.xx.xx</publicIpAddress>
          <privateIpAddress>xx.xx.xx.xx</privateIpAddress>
     </AzureAssetSourceSimple>
     </list>
          </sourceInfo>
          <criticalityScore>5</criticalityScore>
     </Asset>
     </data>
</ServiceResponse>
```

SEARCH Asset using Custom Attribute

API affected	/qps/rest/2.0/search/am/asset
New or Updated APIs	Updated
Operator	POST
DTD or XSD changes	Yes

Sample - SEARCH Asset using Custom Attribute

API Request:

```
curl -XPOST 'https://qualysapi.qualys.com/qps/rest/2.0/search/am/asset'
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
     <filters>
          <Criteria field="id" operator="EQUALS">XXXXXXXXX</Criteria>
     </filters>
</ServiceRequest>
```

Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://qualysapi.qualys.com/qps/xsd/2.0/a
m/asset.xsd">
<responseCode>SUCCESS</responseCode>
<count>1</count>
<hasMoreRecords>false</hasMoreRecords>
<data>
     <Asset>
     <id>XXXXXXXXX</id>
     <name>test1</name>
     <created>2022-10-20T08:24:41Z</created>
     <modified>2023-01-16T22:18:58Z</modified>
     <type>HOST</type>
     <tags>
     <list>
     <TagSimple>
          <id>XXXXXXXXX</id>
          <name>update-ats-847-specif-ag-bu</name>
     </TagSimple>
     </list>
     </tags>
     <customAttributes>
     <list>
     <CustomAttribute>
```

```
            <key>department</key>
            <value>Engineering</value>
        </CustomAttribute>
        </list>
        </customAttributes>
        <sourceInfo>
        <list>
        <AzureAssetSourceSimple>
            <assetId>XXXXXXXXX</assetId>
            <type>AZURE</type>
            <firstDiscovered>2022-10-20T08:24:41Z</firstDiscovered>
            <lastUpdated>2023-01-17T05:20:11Z</lastUpdated>
            <name>test1</name>
            <location>west2</location>
            <vmSize>Standard_B1ls</vmSize>
            <vmId>xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx</vmId>
            <offer>0001-com-ubuntu-server-focal</offer>
            <state>DEALLOCATED</state>
            <publisher>canonical</publisher>
            <version>latest</version>
            <osType>Linux</osType>
            <subnet>/subscriptions/xxxxxxxx-xxxx-xxxx-xxxx-
    xxxxxxxxxxxx/resourceGroups/test-cvsignature-
    test/providers/Microsoft.Network/virtualNetworks/network-
    test1/subnets/default</subnet>
            <subscriptionId>xxxxxxxx-xxxx-xxxx-xxxx-
    xxxxxxxxxxxx</subscriptionId>
            <resourceGroupName>cvsignature-test</resourceGroupName>
            <macAddress>xx-xx-xx-xx-xx-xx</macAddress>
            <publicIpAddress>xx.xx.xx.xx</publicIpAddress>
            <privateIpAddress>xx.xx.xx.xx</privateIpAddress>
        </AzureAssetSourceSimple>
        <AssetSource/>
        </list>
        </sourceInfo>
        <criticalityScore>5</criticalityScore>
    </Asset>
    </data>
    </ServiceResponse>
```

XSD Response:

```
https://qualysapi.qualys.com/qps/xsd/2.0/am/asset.xsd
<schema
xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://am.oxm.api.portal.qualys.com/v2"
xmlns:common="http://oxm.api.portal.qualys.com/common"
targetNamespace="http://am.oxm.api.portal.qualys.com/v2"
```

```
elementFormDefault="qualified">
<include schemaLocation="tag.xsd"/>
<include schemaLocation="asset_source.xsd"/>
<simpleType name="AssetType">
     <restriction base="string">
     <enumeration value="UNKNOWN"/>
     <enumeration value="HOST"/>
     <enumeration value="SCANNER"/>
     <enumeration value="WEBAPP"/>
     <enumeration value="MALWARE_DOMAIN"/>
     </restriction>
</simpleType>
<complexType name="Asset">
     <sequence>
     <element name="id" type="long" minOccurs="0"/>
     <element name="name" type="string" minOccurs="0"/>
     <element name="created" type="dateTime" minOccurs="0"/>
     <element name="modified" type="dateTime" minOccurs="0"/>
     <element name="type" minOccurs="0" type="tns:AssetType"/>
     <element name="tags" type="tns:TagSimpleQList" minOccurs="0"/>
     <element name="customAttributes" type="tns:CustomAttributeQList"
minOccurs="0"/>
     <element name="sourceInfo" type="tns:AssetSourceQList"
minOccurs="0"/>
     <element name="criticalityScore" type="int" minOccurs="0"/>
     </sequence>
</complexType>
```

CA API: Fetch Installer Binary Information for Cloud Agent Linux on zSystems

API affected	/qps/rest/1.0/process/ca/binaryinfo/
New or Updated APIs	Updated
DTD or XSD changes	Yes

With this release, you can fetch the agent installer binary version for Cloud Agent Linux on zSystems using APIs. A two-level check is performed—at the platform level and at the subscription level while retrieving the agent binary information. You can fetch the agent binary version only when the agent is available for the platform.

Note: This is applicable only for Cloud Agent Linux on zSystems on Linux and Linux_Ubuntu platforms.

Input parameters

Use the values provided in the following table for Cloud Agent Linux on zSystems.

Parameter	Description
platform={value}	(mandatory) Use one of the following values for Cloud Agent Linux on zSystems: - `LINUX_S_390_X` - `LINUX_UBUNTU_S_390_X`
architecture=(value)	(mandatory) Use the value `S_390_X` for Cloud Agent Linux on zSystems.

Sample - Fetch binary information when the platform-level and customer-level flags are enabled

This example presents a scenario when both the platform-level and customer-level flags are enabled.

API request

```
curl -u fo_username:password -X POST -H "Content-Type: text/xml" -H
"X-Requested-With: curl" --data-binary @info_binary.xml
"https://<Qualys base URL>/qps/rest/1.0/process/ca/binaryinfo/"
```

Contents of post_data.xml

```
?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <data>
        <BinaryInfo>
            <platform>LINUX_S_390_X</platform>
            <architecture>S_390_X</architecture>
```

```
        </BinaryInfo>
    </data>
</ServiceRequest>
```

XML output:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/binaryinfo.xsd">
  <responseCode>SUCCESS</responseCode>
  <count>1</count>
  <data>
    <AllBinaryInfo>
      <platforms>
        <Platform>
          <name>LINUX_S390X</name>
          <version>3.31.0.14</version>
          <hash>Hash-SHA-256 :
23242e8ef148d094b8327e1cefd0eac5f1f3b6cc7229b0ad6bf222708af82777</hash>
          <extension>.rpm</extension>
        </Platform>
      </platforms>
    </AllBinaryInfo>
  </data>
</ServiceResponse>
```

Sample - Fetch binary information when the platform-level flag is enabled, and customer-level flag is disabled

This example presents a scenario when the Cloud Agent Linux on zSystems is available on a specific platform (POD) but not available for a specific customer or subscription.

API request:

```
curl -u fo_username:password -X POST -H "Content-Type: text/xml" -H
"X-Requested-With: curl" --data-binary @info_binary.xml
"https://<Qualys base URL>/qps/rest/1.0/process/ca/binaryinfo/"
```

Contents of post_data.xml

```
?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <data>
        <BinaryInfo>
            <platform>LINUX_UBUNTU_S_390_X</platform>
            <architecture>S_390_X</architecture>
        </BinaryInfo>
    </data>
</ServiceRequest>
```

XML output:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/binaryinfo.xsd">
  <responseCode>SUCCESS</responseCode>
  <count>1</count>
  <data>
    <AllBinaryInfo>
      <platforms>
        <Platform>
          <name>LINUX_UBUNTU_S390X</name>
          <version>3.31.0.14</version>
          <hash>Hash-SHA-256 :
a613ee47ee7990fc2d13be65b369c1fb7d2f4ffc7f26b9afa14e01d64d933453</hash>
          <extension>.deb</extension>
          <message>This feature is not enabled for your subscription,
Please contact your account manager.</message>
        </Platform>
      </platforms>
    </AllBinaryInfo>
  </data>
</ServiceResponse>
```

Sample - Fetch binary information when platform-level flag is disabled

This example presents a scenario when the Cloud Agent Linux on zSystems is not available on a specific platform (POD).

API request:

```
curl -u fo_username:password -X POST -H "Content-Type: text/xml" -H
"X-Requested-With: curl" --data-binary @info_binary.xml
"https://<Qualys base URL>/qps/rest/1.0/process/ca/binaryinfo/"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <data>
        <BinaryInfo>
            <platform>LINUX_S_390_X</platform>
            <architecture>S_390_X</architecture>
        </BinaryInfo>
    </data>
</ServiceRequest>
```

XML output:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://<Qualys Base URL>/portal-
api/xsd/1.0/ca/binaryinfo.xsd">
  <responseCode>OTHER_ERROR</responseCode>
  <responseErrorDetails>
    <errorMessage>The platform is not enabled, Please contact
TAM</errorMessage>
  </responseErrorDetails>
</ServiceResponse>
```

Updated XSD

XSD: <platform API server>/qps/xsd/1.0/ca/binaryInfo.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://ca.oxm.api.portal.qualys.com/v1"
        elementFormDefault="qualified"
        xmlns:QG="http://ca.oxm.api.portal.qualys.com/v1"
        xmlns:jaxb="http://java.sun.com/xml/ns/jaxb"
        xmlns:xjc="http://java.sun.com/xml/ns/jaxb/xjc"
        jaxb:extensionBindingPrefixes="xjc"
        jaxb:version="2.1"
        xmlns:qcommon="http://oxm.api.portal.qualys.com/common">
    <import namespace="http://oxm.api.portal.qualys.com/common"

schemaLocation="http://oxm.api.portal.qualys.com/common/qualys_common.xsd
"/>
    <include schemaLocation="platform_architecture.xsd"/>
    <complexType name="AllBinaryInfo">
        <sequence>
            <element name="platforms" type="QG:Platform" minOccurs="0"
maxOccurs="unbounded"/>
        </sequence>
    </complexType>
    <complexType name="BinaryInfo">
        <sequence>
           <element name="platform" type="QG:PlatformType" minOccurs="0"
maxOccurs="1"/>
            <element name="architecture" type="QG:PlatformArchitecture"
minOccurs="0" maxOccurs="1"/>
        </sequence>
    </complexType>
    <complexType name = "Platform">
        <sequence>
            <element name = "name" type = "string"/>
            <element name = "architecture" type = "string"/>
```

```
            <element name = "version" type = "string"/>
            <element name = "hash" type = "string"/>
            <element name = "extension" type = "string"/>
            <element name = "message" type = "string"/>
        </sequence>
    </complexType>
</schema>
```

CA API: Download Installer Binary for Cloud Agent Linux on zSystems

API affected	/qps/rest/1.0/download/ca/downloadbinary/
New or Updated APIs	Updated
DTD or XSD changes	No

With this release, you can download the installer binary for Cloud Agent Linux on zSystems using APIs. A two-level check is performed—at the platform level and at the subscription level while downloading the agent installer binary. Only when the agent is available for the platform and your subscription, you can download the agent binary.

Note: This is applicable only for Cloud Agent Linux on zSystems on Linux and Linux_Ubuntu platforms.

Sample - Download Agent Binary when the Platform-level flag is enabled, and customer-level flag is disabled

This example presents a scenario when the Cloud Agent Linux on zSystems is available on a specific platform (POD) but not available for a specific customer or subscription.

API request:

```
curl -u fo_username:password -X POST -H "Content-Type: text/xml" -H
"X-Requested-With: curl" --data-binary @download_binary.xml
"https://<Qualys base URL/qps/rest/1.0/download/ca/downloadbinary/
" --remote-name --remote-header-name
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <data>
        <DownloadBinary>
            <platform>LINUX_S_390_X</platform>
            <architecture>S_390_X</architecture>
        </DownloadBinary>
    </data>
</ServiceRequest>
```

Response:

In this case, the response status: 505 HTTP version not supported is returned, and following message is displayed:

```
This feature is not enabled for your subscription, Please contact your
account manager.
```

Sample - Download Agent Binary when the Platform-level flag is disabled

This example presents a scenario when the Cloud Agent Linux on zSystems is not available on a specific platform (POD).

API request:

```
curl -u fo_username:password -X POST -H "Content-Type: text/xml" -H
"X-Requested-With: curl" --data-binary @download_binary.xml
"https://<Qualys base URL>/qps/rest/1.0/download/ca/downloadbinary/
" --remote-name --remote-header-name
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <data>
        <DownloadBinary>
            <platform>LINUX_UBUNTU_S_390_X</platform>
            <architecture>S_390_X</architecture>
        </DownloadBinary>
    </data>
</ServiceRequest>
```

Response:

In this case, the response status: 505 HTTP version not supported is returned, and following message is displayed:

```
Z-Linux is not enabled, Please contact TAM.
```

Sample - Download Agent Binary when the Platform-level and customer-level flags are enabled

API request:

```
curl -u fo_username:password -X POST -H "Content-Type: text/xml" -H
"X-Requested-With: curl" --data-binary @download_binary.xml
"https://<Qualys base URL>/qps/rest/1.0/download/ca/downloadbinary/
" --remote-name --remote-header-name
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceRequest>
    <data>
        <DownloadBinary>
            <platform>LINUX_UBUNTU_S_390_X</platform>
            <architecture>S_390_X</architecture>
        </DownloadBinary>
    </data>
</ServiceRequest>
```

Response

When both the flags are enabled, the agent installer binary is downloaded successfully.

CA API: Launch On Demand Scan

API affected	qps/rest/1.0/ods/ca/agentasset/
New or Updated APIs	New
DTD or XSD changes	Yes

With this release, we have added API support for launching the on-demand scan on assets where Cloud Agent is installed. The on-demand scan feature helps you with the flexibility to initiate a scan without waiting for the next scheduled scan.

Currently, the following scans can be launched:

- Inventory scan

- Vulnerability scan

- Policy Compliance scan

- UDC scan

- SCA scan

Note: You can launch an on-demand scan on 1000 assets at one time. Maximum 15000 on demand scan requests can be sent each day.

Input Parameter

Use these parameters to configure the type of scans to be launched and CPU throttle limits.

Parameter	Description
scan={value}	(mandatory) Type of on-demand scan to be launched. Specify one of the following values: - `Inventory_Scan` - `Vulnerability_Scan` - `PolicyCompliance_Scan` - `UDC_Scan` - `SCA_Scan` **Note**: You can only launch one type of scan at one time.

Parameter	Description
overrideConfigCpu	(optional) Set this flag to define the CPU throttle limits that the on demand scan will use. - Set to `true` to override the CPU throttle limits set in the configuration profile. - Set to `false` to use the CPU throttle limit values set in the configuration profile. If you do not provide any value in the API request URL, the default value—false is considered. **Note**: By default, Cloud Agent for Windows uses a throttle value of 100, and Cloud Agent for Linux uses a value of 0 (no throttling).

Sample - On demand scan on a single asset

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Cache-Control: no-cache" --data
@SingleAgent_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset/19105105?scan=Inventory_Scan&Override
ConfigCpu=false"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
</ServiceRequest>
```

XML output

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>1</count>
    <data>
        <SingleModuleResponse>
            <module>Inventory Scan</module>
            <count>1</count>
            <assetIds>[19010134]</assetIds>
            <responseCode>SUCCESS</responseCode>
        </SingleModuleResponse>
    </data>
</ServiceResponse>
```

Sample - On demand scan on multiple assets

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Xurl" -H "Cache-Control: no-cache" --
data @Bulk_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset?scan=Inventory_Scan&overrideConfigCpu
=true"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
    <filters>
      <Criteria field="tagName" operator="EQUALS">Tag4</Criteria>
     </filters>
</ServiceRequest>
```

XML output

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>SUCCESS</responseCode>
    <count>4</count>
    <data>
        <SingleModuleResponse>
            <module>SCA Scan</module>
            <count>4</count>
            <assetIds>[16873061, 17180531, 18901656, 18908888]</assetIds>
            <responseCode>SUCCESS</responseCode>
        </SingleModuleResponse>
    </data>
</ServiceResponse
```

Possible Errors Scenarios

The following sample responses present various scenarios where an error can occur and the corresponding error responses.

Sample - On demand scan request when daily limit is exhausted

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Cache-Control: no-cache" --data
@SingleAgent_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset/19105105?scan=Inventory_Scan&Override
```

```
ConfigCpu=false"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
</ServiceRequest>
```

XML output

```
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>OTHER_ERROR</responseCode>
    <responseErrorDetails>
        <errorMessage>OTHER ERROR</errorMessage>
        <errorResolution>Unable to send ODS request because Your daily
limit has reached for ODS. Max limit is 15000 and remaining requests is
0.</errorResolution>
    </responseErrorDetails>
</ServiceResponse>
```

Sample - On demand scan launched on more than 1000 assets

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Xurl" -H "Cache-Control: no-cache" --
data @Bulk_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset?scan=Inventory_Scan&overrideConfigCpu
=true"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
    <filters>
      <Criteria field="tagName" operator="EQUALS">Tag4</Criteria>
     </filters>
</ServiceRequest>
```

XML output

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>INVALID_REQUEST</responseCode>
    <responseErrorDetails>
        <errorMessage>Invalid Request</errorMessage>
        <errorResolution>You may only launch a scan to a maximum of 1000
```

```
assets at once.</errorResolution>
    </responseErrorDetails>
</ServiceResponse>
```

Sample - On demand scan launched when platform is not supported

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Xurl" -H "Cache-Control: no-cache" --
data @Bulk_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset?scan=Inventory_Scan&overrideConfigCpu
=true"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
    <filters>
      <Criteria field="tagName" operator="EQUALS">Tag4</Criteria>
     </filters>
</ServiceRequest>
```

XML output

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>OTHER_ERROR</responseCode>
    <responseErrorDetails>
        <errorMessage>OTHER ERROR</errorMessage>
        <errorResolution>The Platform "MACOSX" is not supported for On-
Demand Scan Request.</errorResolution>
    </responseErrorDetails>
</ServiceResponse>
```

Sample - On demand scan launched when the specific application is not activated

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Cache-Control: no-cache" --data
@SingleAgent_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset/19105105?scan=Vulnerability_Scan&Over
rideConfigCpu=false"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
```

```
</ServiceRequest>
```

XML output

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>OTHER_ERROR</responseCode>
    <responseErrorDetails>
        <errorMessage>OTHER ERROR</errorMessage>
       <errorResolution>VM" module is not activated for the asset, Please
activate the module first to launch On-Demand Scan.".</errorResolution>
    </responseErrorDetails>
</ServiceResponse>
```

Sample - On demand scan launched with the agent version which does not suppor the on-demand scan functionality

API request

```
curl -X POST -H "Content-Type: text/xml" -H "Authorization: Basic
cXVheXNfa2c1NTpRYTIzQDEyMw==" -H "Xurl" -H "Cache-Control: no-cache" --
data @Bulk_ODS.xml "https://<Qualys base
URL>/qps/rest/1.0/ods/ca/agentasset?scan=Inventory_Scan&overrideConfigCpu
=true"
```

Contents of post_data.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<ServiceRequest>
    <filters>
      <Criteria field="tagName" operator="EQUALS">Tag4</Criteria>
     </filters>
</ServiceRequest>
```

XML output

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://<Qualys base
URL>/qps/xsd/1.0/ca/agentasset.xsd">
    <responseCode>OTHER_ERROR</responseCode>
    <responseErrorDetails>
        <errorMessage>OTHER ERROR</errorMessage>
       <errorResolution>This Agent version is not supported for On-Demand
Scan.</errorResolution>
    </responseErrorDetails>
</ServiceResponse>
```

Issues Addressed

- Earlier, when the user passed QWEB_VM, QWEB_PC, QWEB_SCA as a parameter in the agent activation API URL, then the API displayed success response. However, none of the above module were getting activated. After the fix, when the user passes QWEB_VM, QWEB_PC, QWEB_SCA as a parameter in the agent activation API URL, the user gets correct error message.

- We have fixed an issue where the v2 and v3 GET APIs were not fetching ARNs for connectors created through the Connector UI.