vCloud Usage Meter

Version 3.4

API Reference

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1.   Using the vCloud Usage Meter API

1.1   About vCloud Usage Meter

VMware vCloud Usage Meter is a tool that monitors, measures, and provides reports on virtual machine resource usage gathered from vCenter Server. It provides an easy way for Service Providers and Aggregators to gather and report accurate usage to support the vCloud Air Network (previously known as VSPP) billing process. The vCloud Usage Meter is provided as a virtual appliance.

vCloud Usage Meter serves two functions: metering and reporting. Service Providers use the metering part of the tool to collect raw usage data on vCloud Air Network (vCAN) bundles. Service Providers and/or Aggregators use the reporting part of the tool to generate reports for planning, billing, general account management, dispute resolution, and other purposes.

1.2   Audience

This document assumes that the audience is familiar with the following technologies:

- REST framework and conventions
- XML

The audience for this guide is service provider developers.

1.3   Related Documentation

Subject Area	Found At
vCloud Usage Meter User's Guide	VMware Community, via title search
VMware product documentation	http://www.vmware.com/support/pubs

The vCloud Usage Meter REST API, exposed over HTTPS, is provided for clients such as portals, scripts, and other programs external to vCloud Usage Meter.

1.4   Supported Languages

Any programming language that supports the REST framework supports the vCloud Usage Meter API.

1.5   Tokens

All vCloud Usage Meter APIs require authentication. Authentication tokens can be generated in two ways:

- Click the **Manage** link in the *vCloud Usage Meter* Web application, then click the **API** tab.
- From the console with the command `umtoken`

A curl command to invoke API:

```
curl -v -k -H x-usagemeter-authorization:<Auth-Key> https://<UM-
IP>:8443/um/api/customers
```

2.   vCloud Usage Meter API – Customers

This section summarizes vCloud Usage Meter API customer operations.

2.1   Get customers

Get an XML representation of all customers.

Operation	`GET /api/customers`
Sample response	```<?xml version="1.0" encoding="UTF-8"?>
<customers>
<customer>
<link method="get" rel="latest" href="/api/customers/23" />
<link method="delete" rel="cancel" href="/api/customers/23" />
<id>23</id>
<name>company23</name>
</customer>
<customer>
<link method="get" rel="latest" href="/api/customers/24" />
<link method="delete" rel="cancel" href="/api/customers/24" />
<id>24</id>
<name>company23-A</name>
</customer>
</customers>```
Success response	`200 OK`

2.2   Get customer

Get an XML representation of a specified customer.

Operation	`GET /api/customer/{id}`
Sample response	```<?xml version="1.0" encoding="UTF-8"?>
<customer>
<link method="get" rel="latest" href="/api/customer/23" />
<link method="delete" rel="cancel" href="/api/customer/23" />
<id>23</id>
<name>company23</name>
</customer>```
Success response	`200 OK`

2.3   Get customer rules

Get an XML representation of the rules for a specified customer.

Operation	`GET /api/customer/{id}/rules`

| Sample response | <pre><?xml version="1.0" encoding="UTF-8"?>
<rules>
   <rule>
      <link method="get" rel="latest" href="/api/rules/40" />
      <link method="delete" rel="cancel" href="/api/rules/40" />
      <id>40</id>
      <vcServerId>12</vcServerId>
      <customerId>23</customerId>
      <objectType>Resource Pool</objectType>
      <valueType>Unique ID</valueType>
      <value>resgroup-43</value>
   </rule>
   <rule>
      <link method="get" rel="latest" href="/api/rules/41" />
      <link method="delete" rel="cancel" href="/api/rules/41" />
      <id>41</id>
      <vcServerId>12</vcServerId>
      <customerId>23</customerId>
      <objectType>Resource Pool</objectType>
      <valueType>Unique ID</valueType>
      <value>resgroup-46</value>
   </rule>
</rules></pre> |
|---|---|
| Success response | `200 OK` |

2.4   Delete a customer and associated rules

Delete a specified customer and delete rules associated with the customer.

Operation	`DELETE /api/customer/{id}`
Success response	`204 No Content`

2.5   Create a customer

Create a customer from an included XML body.

The country must be a valid 2 letter country code. Country code information is available from the ISO Organization, [ISO 3166-1-alpha-2 code](#).

Operation	`POST /api/customer`

Body	`<customer xmlns="http://www.vmware.com/UM">`
	`        <name>Customer Name</name>`
	`        <country>US</country>`
	`        <postalCode>90210</postalCode>`
	`</customer>`

Sample response	`<?xml version="1.0" encoding="UTF-8"?>`
	`<customer>`
	`        <link method="get" rel="latest" href="/api/customer/25" />`
	`        <link method="delete" rel="cancel" href="/api/customer/25" />`
	`        <id>25</id>`
	`        <name>Customer Name</name>`
	`        <country>United States</country>`
	`        <postalCode>90210</postalCode>`
	`</customer>`

Success response	`201 Created`

2.6   Update a customer

Update a specified customer.

Operation	`PUT /api/customer/{id}`

Body	`<customer xmlns="http://www.vmware.com/UM">`
	`        <name>Customer - Added address</name>`
	`        <country>CA</country>`
	`        <postalCode>90210</postalCode>`
	`</customer>`

Success response	`201 Created`

3.   vCloud Usage Meter API – Rules

This section summarizes vCloud Usage Meter API rules operations.

Also see Delete a customer and associated rules.

3.1   Get rules

Get an XML representation of all rules.

Operation	`GET /api/rules`
| Sample response | ```
<?xml version="1.0" encoding="UTF-8"?>
<rules>
    <rule>
        <link method="get" rel="latest" href="/api/rule/42" />
        <link method="delete" rel="cancel" href="/api/rule/42" />
        <id>42</id>
        <vcServerId>12</vcServerId>
        <customerId>24</customerId>
        <objectType>Resource Pool</objectType>
        <valueType>Unique ID</valueType>
        <value>resgroup-59</value>
    </rule>
    <rule>
        <link method="get" rel="latest" href="/api/rule/43" />
        <link method="delete" rel="cancel" href="/api/rule/43" />
        <id>43</id>
        <vcServerId>12</vcServerId>
        <customerId>24</customerId>
        <objectType>Resource Pool</objectType>
        <valueType>Unique ID</valueType>
        <value>resgroup-62</value>
    </rule>
    <rule>
        <link method="get" rel="latest" href="/api/rule/44" />
        <link method="delete" rel="cancel" href="/api/rule/44" />
        <id>44</id>
        <vcServerId>12</vcServerId>
        <customerId>24</customerId>
        <objectType>Resource Pool</objectType>
        <valueType>Unique ID</valueType>
        <value>resgroup-64</value>
    </rule>
    <rule>
        <link method="get" rel="latest" href="/api/rule/45" />
        <link method="delete" rel="cancel" href="/api/rule/45" />
        <id>45</id>
``` |

```
                      <vcServerId>12</vcServerId>
                      <customerId>24</customerId>
                      <objectType>Resource Pool</objectType>
                      <valueType>Unique ID</valueType>
                      <value>resgroup-66</value>
                 </rule>
            </rules>
```

Success response	200 OK

3.2   Get rule

Get an XML representation of a specified rule.

Operation	`GET /api/rule/{id}`
Sample response	```<?xml version="1.0" encoding="UTF-8"?>
<rule>
<link method="get" rel="latest" href="/api/rule/42" />
<link method="delete" rel="cancel" href="/api/rule/42" />
<id>42</id>
<vcServerId>12</vcServerId>
<customerId>24</customerId>
<objectType>Resource Pool</objectType>
<valueType>Unique ID</valueType>
<value>resgroup-59</value>
</rule>```
Success response	200 OK

3.3   Delete rule

Delete a specified rule.

Operation	`DELETE /api/rule/{id}`
Success response	204 No Content

3.4   Create a rule

Create a rule from an included XML body.

Operation	`POST /api/rule`

Body	`<rule xmlns="http://www.vmware.com/UM">`
	`    <vcServerId>10.255.79.10</vcServerId>`
	`    <customerName>company23-A</customerName>`
	`    <objectType>VM</objectType>`
	`    <valueType>Unique ID</valueType>`
	`    <value>vm-10</value>`
	`</rule>`
Sample response	`<?xml version="1.0" encoding="UTF-8"?>`
	`<rule>`
	`    <link method="get" rel="latest" href="/api/rule/46" />`
	`    <link method="delete" rel="cancel" href="/api/rule/46" />`
	`    <id>46</id>`
	`    <vcServerId>11</vcServerId>`
	`    <customerId>24</customerId>`
	`    <objectType>VM</objectType>`
	`    <valueType>Unique ID</valueType>`
	`    <value>vm-10</value>`
	`</rule>`
Success response	`201 Created`

3.5　Update a rule

Update a specified rule.

Operation	PUT /api/rule/{id}
Body	```<rule xmlns="http://www.vmware.com/UM"> <vcServerId>10.255.79.10</vcServerId> <customerName>company23-A</customerName> <objectType>VM</objectType> <valueType>Unique ID</valueType> <value>vm-10</value></rule>```
Sample response	```<?xml version="1.0" encoding="UTF-8"?><ok></ok>```
Success response	201 Created

4.   vCloud Usage Meter API – Reports

This section summarizes vCloud Usage Meter API report operations.

4.1   Get reports

Get an XML description for all reports.

Operation	`GET /api/reports`

Sample response	`<?xml version="1.0" encoding="UTF-8"?>`
	`<reports>`
	    `<report>`
	        `<link method="get" rel="Monthly Usage Units" href="/api/reports/5" />`
	    `</report>`
	    `<report>`
	        `<link method="get" rel="Virtual Machines by Product Server" href="/api/reports/19" />`
	    `</report>`
	    `<report>`
	        `<link method="get" rel="Customer Monthly Usage" href="/api/reports/24" />`
	    `</report>`
	    `<report>`
	        `<link method="get" rel=" Virtual Machine History" href="/api/reports/21" />`
	    `</report>`
	`</reports>`

Success response	`200 OK`

4.2   Get report

Get a tsv representation of a specified report.

Operation	`GET /api/report/1?dateFrom=2015060100&dateTo=2015070100`

Sample response	`#Version: 3.0.0`
	`#Report Type: Detailed Billing Report`
	`#Service Provider: FooBar`
	`#Start Time: Mon Jun 01 04:00:00 UTC 2015`
	`#End Time: Wed Jul 01 16:00:00 UTC 2015`
	`#Per-VM Memory Cap (GB): 24`
	`#Contact: John`
	`#Email: johndoe@company.com`
	`#Phone: 444 444 5555`
	`#Time   Host DNS Name  Host Memory Size (KB) vSphere License       VM RAM (MB)      Billing RAM (MB)     VM CPUs VM Instance UUID`
	`1336419271199  10.137.207.70  50267964      VMware vSphere 5 Enterprise Plus   4096    2048    2       50197903-990c-3614-e9b2-5809c510551c`
	`1336419271199  10.137.207.70  50267964      VMware vSphere 5 Enterprise Plus   512     256     1       50198210-c62a-066b-7655-3722b7a89ce8`
	`  ...`

Success response	`200 OK`

5.　vCloud Usage Meter API – vCenter Servers

This section summarizes vCloud Usage Meter API vCenter Server operations.

5.1　Get vCenter Servers

Get an XML description for all vCenter Servers.

Operation	`GET /api/vcenters`
Sample response	```xml <?xml version="1.0" encoding="UTF-8"?> <vcServers> <VC> <link method="get" rel="latest" href="/api/vcenter/3" /> <vcServerID>3</vcServerID> <host>10.255.79.100</host> <fullname>VMware vCenter Server 5.1.0 build-797624</fullname> <active>true</active> <instanceUuid>86E78D4D-7962-4147-BA90-4B3A59938CA0</instanceUuid> <user>root</user> </VC> <VC> <link method="get" rel="latest" href="/api/vcenter/1" /> <vcServerID>1</vcServerID> <host>10.24.183.244</host> <fullname>VMware vCenter Server 5.1.0 build-799731</fullname> <active>true</active> <instanceUuid>7C1A5AF7-4DB1-4E90-BDFE-A3EEF1B1C79B</instanceUuid> <user>root</user> </VC> </vcServers>```
Success response	200 OK

5.2   Create a vCenter Server

Create a vCenter Server.

Operation	POST /api/vcenter
Body	``` <VC xmlns="http://www.vmware.com/UM"> <hostname>10.255.79.5</hostname> <username>root</username> <password>vmware</password> <monitor>true</monitor> </VC> ```
Sample response	``` <?xml version="1.0" encoding="UTF-8"?> <vcId> <VC> <link method="get" rel="latest" href="/api/vcenter/4" /> <vcServerID>4</vcServerID> <host>10.255.79.5</host> <fullname>VMware vCenter Server 5.1.0 build-799731</fullname> <active>true</active> <instanceUuid>D458EA7E-68EC-4B22-94D8- D7543E01711A</instanceUuid> <user>root</user> </VC> </vcId> ```
Success response	200 OK

5.3   Get vCenter Server

Get an XML representation of a specified vCenter Server.

Operation	`GET /api/vcenter/{id}`
Sample response	```<?xml version="1.0" encoding="UTF-8"?>
<vcserver>
<VC>
<link method="get" rel="latest" href="/api/vcenter/1" />
<vcServerID>1</vcServerID>
<host>10.24.183.244</host>
<fullname>VMware vCenter Server 5.1.0 build-799731</fullname>
<active>true</active>
<instanceUuid>7C1A5AF7-4DB1-4E90-BDFE-A3EEF1B1C79B</instanceUuid>
<user>root</user>
</VC>
</vcserver>```
Success response	`200 OK`

5.4   Update a vCenter Server

Update details or activate a specified vCenter Server.

Operation	`PUT /api/vcenter/{id}`
Body	```<VC xmlns="http://www.vmware.com/UM">
<hostname>10.255.79.100</hostname>
<username>root</username>
<password>vmware</password>
<monitor>true</monitor>
</VC>```
Success response	`200 OK`

5.5   Delete a vCenter Server

Delete or deactivate a specified vCenter Server.

Operation	DELETE /api/vcenter/{id}
Success response	200 OK

6.   vCloud Usage Meter API – vCloud Director Server

This section summarizes vCloud Usage Meter API vCloud Director Server operations.

6.1   Get vCloud Director Server

Get an XML representation for all vCloud Director Servers.

Operation	**Caution** `GET /api/getAllVcd`
| Sample response | ```xml
<?xml version="1.0" encoding="UTF-8"?>
<vcdServers>
    <VCD>
        <link method="get" rel="latest" href="/api/vcd/6" />
        <vcdServerId>6</vcdServerId>
        <active>true</active>
        <host>10.141.112.165</host>
        <version>5.1</version>
        <user>cloudadmin</user>
    </VCD>
    <VCD>
        <link method="get" rel="latest" href="/api/vcd/7" />
        <vcdServerId>7</vcdServerId>
        <active>true</active>
        <host>10.255.79.123</host>
        <version>1.5</version>
        <user>admin</user>
    </VCD>
</vcdServers>
``` |
| Success response | `200 OK` |

6.2   Create a vCloud Director Server

Create a vCloud Director Server.

Operation	`POST /api/vcd`

Body	```<Vcd xmlns="http://www.vmware.com/UM">```
	``` <hostname>10.255.79.123</hostname>```
	``` <username>admin</username>```
	``` <password>vmware123</password>```
	```</Vcd>```

Sample response	```<?xml version="1.0" encoding="UTF-8"?>``` ```<vcId>8</vcId>```
Success response	`200 OK`

6.3   Get vCloud Director Server

Get an XML representation of a specified vCloud Director Server.

Operation	`GET /api/vcd/{id}`

Sample response	```<?xml version="1.0" encoding="UTF-8"?>```
	```<vcdServer>```
	``` <VCD>```
	``` <link method="get" rel="latest" href="/api/vcd/8" />```
	``` <vcdServerId>8</vcdServerId>```
	``` <active>true</active>```
	``` <host>10.255.79.123</host>```
	``` <version>1.5</version>```
	``` <user>admin</user>```
	``` </VCD>```
	```</vcdServer>```

Success response	`200 OK`

6.4   Update a vCloud Director Server

Update details or activate a specified vCloud Director Server.

Operation	`PUT /api/vcd/{id}`
Sample response	`<?xml version="1.0" encoding="UTF-8"?>` `<vcId>8</vcId>`
Success response	`200 OK`

6.5   Delete a vCloud Director Server

Delete or deactivate a specified vCloud Director Server.

Operation	`DELETE /api/vcd/{id}`
Success response	`200 OK`

7.   vCloud Usage Meter API – Horizon DaaS Server

This section summarizes vCloud Usage Meter API Horizon DaaS Server operations.

7.1   Get All Horizon DaaS Servers

Get an XML representation for all Horizon DaaS Servers.

Operation	GET /api/products/horizonDataServers
Sample response	```<?xml version="1.0" encoding="UTF-8"?>
<horizonDataServers>
     <horizonDataServer
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://www.vmware.com/UM" xmlns="http://www.vmware.com/UM">
          <id>4</id>
          <uuid>zs1</uuid>
          <hostname>10.255.79.110</hostname>
          <username>root</username>
          <active>true</active>
          <version>
               ZCA Release zca-8.0.2.939532 ZCS Build
8.0.2.GA.5569.UBUNTU10.64 NETWORK edition.
          </version>

<fingerprint>85:92:b5:ff:ed:f6:45:b4:d2:46:11:a9:50:16:63:e9</fingerprint>
</horizonDataServer>
</horizonDataServers>``` |
| Success response | 200 OK |

7.2   Create a Horizon DaaS Server

Create a Horizon DaaS Server.

Operation	POST /api/products/horizonDataServers
Body	```<horizonDataServer xmlns="http://www.vmware.com/UM" xmlns:tns="http://www.vmware.com/UM" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"> <uuid>zs1</uuid> <hostname>10.255.79.110</hostname> <username>root</username> <password>pw</password> </horizonDataServer>```
Success response	201 Created

7.3   Get Horizon DaaS Server

Get an XML representation of a specified Horizon DaaS Server.

Operation	GET /api/products/horizonDataServers/{id}
Sample response	```<?xml version="1.0" encoding="UTF-8"?> <horizonDataServer xmlns="http://www.vmware.com/UM" xmlns:tns="http://www.vmware.com/UM" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"> <uuid>zs1</uuid> <hostname>10.255.79.110</hostname> <username>root</username> <password>pw</password> </horizonDataServer>```
Success response	200 OK

7.4   Delete a Horizon DaaS Server

Delete or deactivate a specified Horizon DaaS Server.

Operation	`DELETE /api/products/horizonDataServers/{id}`
Success response	`200 OK`