

Installing and Configuring vCloud Usage Meter

vCloud Usage Meter 4.1

You can find the most up-to-date technical documentation on the VMware website at:

<https://docs.vmware.com/>

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What is vCloud Usage Meter

1

vCloud Usage Meter is a virtual appliance that meters and collects data for products that are part of the VMware Cloud Provider Program. vCloud Usage Meter is installed on a vCenter Server instance.

What data does vCloud Usage Meter collect?

vCloud Usage Meter collects product consumption data from vCenter Server, NSX Manager and vRealize Operations Manager instances.

- Collected data from the vCenter Server instances includes DNS name, physical memory (RAM), and license type.
- Collected data from the virtual machine includes the metered product name, hostname, allocated and billing virtual memory (vRAM), CPU, and instance universal unique identifier (UUID).
- Collected data from products includes billing vRAM, and other metrics specific to the metered product.

How does vCloud Usage Meter report monthly product consumption data?

vCloud Usage Meter works in conjunction with vCloud Usage Insight, which is a service that aggregates the data collected from vCloud Usage Meter instances, and automatically pre-fills it into the Commerce Portal. To automatically report and pre-fill your aggregated monthly product consumption data from vCloud Usage Meter into the Commerce Portal, you must register your vCloud Usage Meter instances with Commerce Portal.

For information about the VMware Cloud Provider Program, see <http://www.vmware.com/partners/service-provider>.

Before you begin with vCloud Usage Meter

2

To collect accurate usage data, vCloud Usage Meter requires a specific configuration of the metered vCenter Server instances. To access the vCloud Usage Meter Web interface, you must allow access on the appropriate TCP ports.

Lookup Service

Before connecting to the vCenter Server instance, the vCloud Usage Meter appliance must connect to the vCenter Single Sign-On Lookup Service that resides in the Platform Services Controller with which your vCenter Server instance is registered. If you use an external Platform Services Controller, enter the IP address of the external Platform Services Controller when registering your vCenter Server in the vCloud Usage Meter Web interface. If you use an embedded Platform Services Controller, enter the IP address of the vCenter Server instance. vCloud Usage Meter takes the default port number of the Lookup Service to be *7444*.

If you do not set up the connection properly, on the **Notification** tab of the Web interface, all vCenter Server collections fail with the following error message: *Unable to connect vCenter-Server-or-IP-address:7444*.

vCenter Server Clusters

Service providers normally host customer and administrative virtual machines on a single vCenter Server instance. Tenants consume compute resources from the customer virtual machines, whereas service providers use the administrative virtual machines for internal purposes. To ensure accurate reporting to service providers and to VMware, you must apply a degree of separation between customer and administrative virtual machines. The best practice is to create a dedicated cluster for each type. For example, create a *Customer* cluster to host all customer virtual machines and a *Management* cluster to host all virtual machines that are vital to the service provider business operations. The separation of the virtual machines based on their function, ensures that vCloud Usage Meter reports do not contain mixed usage data of customer and administrative virtual machines.

ESXi Licenses

After you create dedicated clusters for the virtual machines based on their functions, you must assign proper ESXi licenses to the cluster hosts.

TCP Ports

vCloud Usage Meter uses predefined TCP ports. If you manage network components from outside a firewall, you might need to configure the firewall to allow access to the appropriate ports.

Table 2-1. Configuration of TCP Ports for vCloud Usage Meter

| Port | Source | Target | Purpose |
|------|--------------------|--------------------|---|
| 443 | vCloud Usage Meter | vCenter Server | vSphere API. If the default value does not work for you, you can change it. |
| 8443 | Client browser | vCloud Usage Meter | Used for the Web interface. |

How do I set up vCloud Usage Meter

3

vCloud Usage Meter is a virtual appliance that you deploy by using the vSphere Web Client. To set up the virtual appliance, you must set the required passwords, configure your network, and add a vCenter Server instance for metering.

The size of your data set and the vCenter Server inventories that vCloud Usage Meter meters, affect its speed of data collection, so you must note system requirements and metering capacities. For large data sets and vCenter Server inventories, consider deploying more than one vCloud Usage Meter appliance. You can consolidate the reported data from multiple virtual appliances in monthly reports to your VMware Cloud Provider Program aggregator.

To avoid configuration problems and ensure accurate metering of products, the vCloud Usage Meter date and time must be synchronized with the date and time of the metered products. As a best practice, use the same NTP server for the vCloud Usage Meter appliance and the metered products.

This chapter includes the following topics:

- [How do I deploy vCloud Usage Meter](#)
- [How do I configure a network protocol profile for vCloud Usage Meter](#)
- [How do I access the vCloud Usage Meter Web interface](#)
- [How do I set up a proxy server](#)
- [How do I configure an NTP Server](#)
- [How do I add a vCenter Server instance for metering](#)

How do I deploy vCloud Usage Meter

You deploy the vCloud Usage Meter appliance by using the vSphere Web Client.

Prerequisites

- Download the vCloud Usage Meter OVA installation file from the [My VMware](#) download product page and save it locally.
- You must have access and sufficient privileges to deploy an OVA file by using the vSphere Web Client.

Procedure

- 1 Log in to the vSphere Web Client as a user who has sufficient privileges to deploy an OVA file.
- 2 In the vSphere Web Client, navigate to **Hosts and Clusters**.
- 3 Right-click a target host or cluster for your vCloud Usage Meter appliance, and select **Deploy OVF Template**.
- 4 In the **Deploy OVF Template** wizard, navigate to the vCloud Usage Meter OVA file, and click **Next**.
- 5 Enter a unique name for the vCloud Usage Meter appliance, select the target deployment location, and click **Next**.

- 6 On the **Select a compute resource** page, select the deployment target resource in which to run the vCloud Usage Meter appliance, and click **Next**.

You can choose a cluster, a host, a vApp, or a resource pool.

- 7 Verify the OVF template details and click **Next**.
- 8 Review and accept the end-user license agreement, and click **Next**.
- 9 On the **Select storage** page, select where and how to store the vCloud Usage Meter files.
Select the virtual disk format, the VM storage policy, and the datastore for the appliance.

- 10 Select a network for the deployed template and click **Next**.

By default, the appliance is deployed with IP allocation set to DHCP and protocol set to IPv4. Do not change the IP protocol to IPv6.

- 11 Set the passwords for the **root**, **usagemeter**, and **umauditor** accounts.

The **umauditor** user account has read-only access to the configuration and log files.

Note Keep a record of the **root** password. The **root** password cannot be recovered, but can be reset. See [How do I reset the root password](#) for instructions about changing the vCloud Usage Meter **root** password.

- 12 On the **Ready to complete** page, review the information and click **Finish**.

Important To avoid compliance issues with VMware Cloud Provider Program, do not clone vCloud Usage Meter appliances. If you need an additional vCloud Usage Meter instance, you must deploy a new vCloud Usage Meter appliance.

Results

The default time zone of the installed vCloud Usage Meter virtual appliance is UTC and it cannot be changed.

What to do next

If you selected `fixed` IP allocation policy, configure a Network Protocol Profile for vCloud Usage Meter. See [How do I configure a network protocol profile for vCloud Usage Meter](#).

Set the vCloud Usage Meter appliance vRAM as needed. Most service providers can run well with 3600 MB (default). Memory use can be monitored on the Support page and adjusted as needed.

How do I configure a network protocol profile for vCloud Usage Meter

When you deploy vCloud Usage Meter, you must create an associated network protocol profile.

Because the OVF template uses network properties, vCloud Usage Meter might not work correctly unless the assigned networks have an associated network protocol profile. If not, the vCloud Usage Meter appliance does not power on and users get a message that there is no associated network protocol profile.

To configure a network protocol profile for your vCloud Usage Meter appliance, you must use an IPv4 configuration.

For more information about configuring a network protocol profile, see [Add a Network Protocol Profile](#) in the *VMware vSphere Documentation*.

How do I access the vCloud Usage Meter Web interface

You log in to the vCloud Usage Meter Web interface to configure the appliance and to add vCenter Server instances for metering. To access the vCloud Usage Meter Web interface, use the vSphere Web Client console.

Prerequisites

- Verify that the vCloud Usage Meter appliance is powered on.
- You must install VMware Remote Console (VMRC). For more information about the VMRC, see [About VMware Remote Console](#) in the *vSphere Single Host Management - VMware Host 6.5 documentation*.

Procedure

- 1 Locate the vCloud Usage Meter virtual machine in the vSphere Web Client Navigator and select it.
- 2 Click the **Summary** tab.
- 3 Right-click the virtual machine and select **Open Console**.
- 4 Select one of the console connection types.
 - To connect to the virtual machine console using a Web browser, select **Web Console**. A best practice is to use the **Web Console** connection.

- To connect to the virtual machine console using a standalone remote console application, select **VMware Remote Console**.
- 5 Log in to the console as **root** with the password that was configured at installation, and press Enter.
 - 6 In your browser, enter the URL for accessing the vCloud Usage Meter Web interface that appears in the console, and log in as **usagemeter** with the password configured at installation.
 - 7 After you log in to the Web interface, you must follow the **UM to vUI connector** wizard prompts.

The **UM to vUI connector** wizard guides you through the steps for enabling your vCloud Usage Meter instances for automatic monthly usage reporting to VMware.

What to do next

- Set up a proxy server between vCloud Usage Meter and the Internet.
- To return to the virtual machine console, enter `exit`.

How do I set up a proxy server

To report usage data to vCloud Usage Insight, vCloud Usage Meter requires a connection to the Internet. To establish a connection between vCloud Usage Meter and the Internet, you must configure a proxy server.

The first time you log in to the vCloud Usage Insight Web interface, a pop-up window to configure the proxy server displays. However, you can configure the proxy settings later.

Procedure

- 1 In the main menu bar of the vCloud Usage Meter Web interface, select **Settings > Proxy**.
- 2 Select the proxy connection type.
- 3 Enter the IP address or the host name of the network proxy server in the **IP or hostname** text box.
- 4 Enter the port number in the text box next to the IP address of the network proxy server.
The port number value must be a number between 0 and 65535.
- 5 Enter the user name and password.
- 6 To test the network connectivity between the vCloud Usage Meter appliance and vCloud Usage Insight, click **Test**.

You receive a `Proxy tested successfully.` message after the settings are correctly populated and tested.

- 7 Click **Save**.

You receive a `Proxy settings saved.` message after the settings are correctly populated and saved.

How do I configure an NTP Server

To avoid configuration issues and ensure accurate metering of products, configure the vCloud Usage Meter appliance to use the same NTP server as the metered products.

Procedure

- 1 Log in to the vCloud Usage Meter console as **root**.
- 2 To configure an NTP server, open the `/etc/ntp.conf` file using a text editor.
- 3 Add the NTP server entries in the file in the following format.

```
server your_NTP_server_IP_address_or_name
```

- 4 Save the changes and close the `/etc/ntp.conf` file.
- 5 Restart the NTP service.

```
service ntpd restart
```

- 6 Verify the NTP server details.

```
ntpq -p
```

- 7 Enable the NTP service to run automatically at boot time.

```
systemctl enable ntpd.service
```

How do I add a vCenter Server instance for metering

To begin metering with vCloud Usage Meter, you must add at least one vCenter Server instance.

Prerequisites

Verify that a single vRealize Operations Manager instance manages the vCenter Server instance that you add. vCloud Usage Meter cannot collect accurate usage data from a vCenter Server instance managed by multiple vRealize Operations Manager servers.

Procedure

- 1 In the main menu bar of the vCloud Usage Meter Web interface, click **Products**.
- 2 In the left pane, click **vCenter Server**.
- 3 On the **Product List** page, click **Add**.
- 4 In the **Endpoint** text box, enter the host name or IP address of the vCenter Server instance.
The default port number is 443.
- 5 In the **Username** and **Password** text boxes, enter the credentials of a vCenter Single Sign-On user, such as `administrator@vsphere.local`.

- 6 (Optional) If you use an external Platform Services Controller, select the **Use External Platform Services Controller (PSC)** check box.

- a In the **PSC Endpoint** text box, enter the IP address or host name of the external Platform Services Controller.
- b Enter the port number for the external Platform Services Controller.

The default port number is 7444.

- 7 Click **Add**.

For each vCenter Server instance that you add, vCloud Usage Meter presents a certificate that you must accept before proceeding.

- 8 To accept the certificate, you can either navigate to the **Notifications** tab in the top right menu bar and click **Accept Certificate > Accept** or navigate to **Products > vCenter**, select the vCenter Server instance, and click **Please accept certificate** in the Status column.

Results

The vCenter Server instance is added to the list of vCenter Server instances and is now metered by vCloud Usage Meter.

If an error occurs, a message appears on the **Product List** page and the vCenter Server instance is not added.

vCloud Usage Meter collects usage data from all vCenter Server instances that you add.

Upgrading vCloud Usage Meter

4

You can install vCloud Usage Meter only as a new appliance, and not as an in-place upgrade. After you deploy the vCloud Usage Meter 4.1 appliance, you can optionally migrate vCenter Server, NSX Manager, and vRealize Operations Manager configuration data from the source vCloud Usage Meter 3.6.x appliance to the target vCloud Usage Meter 4.1 appliance.

If you migrate from vCloud Usage Meter 3.6.x, you must accept the legal agreement that is displayed after you complete the migration to vCloud Usage Meter 4.1.

Regardless if you migrated data, or deployed and configured a new appliance, run both vCloud Usage Meter appliances for at least two months, and use vCloud Usage Meter 4.1 for reporting. Then shut down and back up the old vCloud Usage Meter 3.6.x appliance.

VMware Cloud Provider Program stipulates that Service Providers keep the product consumption data for 24 months going back from the current month.

To upgrade the vCloud Usage Meter appliance, you must install only the official vCloud Usage Meter updates provided by VMware.

This chapter includes the following topics:

- [How do I migrate product configuration data to vCloud Usage Meter 4.1](#)
- [How do I migrate production workloads from vCloud Usage Meter 3.6.x to vCloud Usage Meter 4.1](#)

How do I migrate product configuration data to vCloud Usage Meter 4.1

You can migrate the vCenter Server, NSX Manager and vRealize Operations Manager product configuration data from your source vCloud Usage Meter 3.6.x appliance to your vCloud Usage Meter 4.1 appliance.

Prerequisites

- Back up or take a snapshot of the source vCloud Usage Meter appliance.
- You must have the TCP host name or IP address and the *usgmtr* user password of the source vCloud Usage Meter appliance.
- Deploy vCloud Usage Meter 4.1 as a new appliance.

Procedure

- 1 Log in to the source vCloud Usage Meter console as **root**.
- 2 Start the SSHD service in the source vCloud Usage Meter appliance by running the following command.

```
service sshd start
```

- 3 Log in to the target vCloud Usage Meter console as **usagemeter**.
- 4 Start the SSHD service in the target vCloud Usage Meter appliance by running the following command.

```
su root service sshd start
```

- 5 To migrate the source product configuration data to the target vCloud Usage Meter 4.1 appliance, run the command.

```
migrateum hostname
```

Here, *hostname* is the TCP host name or IP address of the source vCloud Usage Meter appliance from which you are migrating the vCenter Server configuration data.

The `migrateum` command uses SSH and Secure copy protocol to export the database and keystore files from the source system and copy it to vCloud Usage Meter 4.1.

- a Confirm that you want to migrate vCloud Usage Meter data.

You must enter the **usgmtr** password of the source vCloud Usage Meter appliance and confirm that you want to proceed with the data migration.

- 6 In the source vCloud Usage Meter console, disable the SSHD service by running the following command.

```
service sshd stop
```

- 7 In the target vCloud Usage Meter console, disable the SSHD service by running the following command.

```
service sshd stop
```

Results

The login credentials for the vCloud Usage Meter 4.1 Web interface are the **usagemeter** ones, set during the deployment of vCloud Usage Meter 4.1. All trusted self-signed VMware product certificates you accepted on the source vCloud Usage Meter are copied to vCloud Usage Meter 4.1.

Important You can run the `migrateum` command only once.

To ensure that vCloud Usage Meter 4.1 is working correctly, run the new appliance in parallel with the source appliance for at least two months.

What to do next

If you want to retrieve additional certificates and validate the product connectivity, in the main menu bar of the vCloud Usage Meter Web interface, navigate to **Products > Product List** and click **Edit** and **Save** for each product.

If you have vCenter Server instances that use an external Platform Service Controller, enter the additional Platform Service Controller information in vCloud Usage Meter. For more information about configuring Platform Service Controller, see [How do I add a vCenter Server instance for metering](#).

How do I migrate production workloads from vCloud Usage Meter 3.6.x to vCloud Usage Meter 4.1

You can migrate the production workloads from your vCloud Usage Meter 3.6.x appliance to vCloud Usage Meter 4.1 appliance.

If you want to compare the monthly usage reports from the vCloud Usage Meter 3.6.x appliance with the monthly usage reports from the vCloud Usage Meter 4.1 appliance, register the vCloud Usage Meter 4.1 instance in Commerce Portal as **Test**, and run both appliances for a full reporting period. To enable the automatic monthly usage reporting from the vCloud Usage Meter 4.1 appliance to Commerce Portal, you must migrate the production workloads from vCloud Usage Meter 3.6.x to vCloud Usage Meter 4.1.

Important vCloud Usage Meter 4.1 begins metering from the date on which the new appliance is deployed and configured. To ensure correct reporting for a full month:

- If you deploy vCloud Usage Meter 4.1 after the reporting period started, vCloud Usage Meter cannot provide usage data between the start of the reporting period and the deployment date. The earliest date on which you can change the mode of the vCloud Usage Meter 4.1 instance from **Test** to **Production** is the first day of the next reporting period.

For example: You deploy vCloud Usage Meter 4.1 on 10 JAN. The earliest date to change the mode of the new instance from **Test** to **Production** is 1 FEB UTC time.

- If you deploy vCloud Usage Meter 4.1 on the first day of the reporting period, you can change the mode from **Test** to **Production** at any time.
-

Prerequisites

- Deploy vCloud Usage Meter 4.1 as a new appliance.
- Migrate the product configuration data from vCloud Usage Meter 3.6.x to vCloud Usage Meter 4.1.
- Register the vCloud Usage Meter 4.1 instance in Commerce Portal as a **Test** instance.

Procedure

- 1 To enable the automatic monthly usage reporting from the vCloud Usage Meter 4.1 appliance to Commerce Portal, change the mode of the vCloud Usage Meter 4.1 instance from **Test** to **Production**.
- 2 Disable the metering from the vCloud Usage Meter 3.6.x appliance.
 - If the vCloud Usage Meter 3.6.x appliance is registered in Commerce Portal, change the mode of the vCloud Usage Meter 3.6.x instance from **Production** to **Test**.
 - Archive the vCloud Usage Meter 3.6.x appliance.
- 3 Repeat the steps for all vCloud Usage Meter 3.6.x instances from which you want to migrate the production workloads to vCloud Usage Meter 4.1.

What else can I do with vCloud Usage Meter

5

You use vCloud Usage Meter to meter and generate reports for the usage of products that are part of the VMware Cloud Provider Program.

| To... | See... |
|---|--|
| Change the vCloud Usage Meter logging level | How do I change vCloud Usage Meter logging level |
| Manage vCloud Usage Meter accounts | Managing vCloud Usage Meter accounts |
| Manage the metering of vCloud Usage Meter | Manage the metering in vCloud Usage Meter |