



Virtuozzo Hybrid Infrastructure 4.7

Integration Guide for CloudBlue Connect

10/18/2021

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1 Introduction

This guide explains how to enable and manage integration between Virtuozzo Hybrid Infrastructure and the CloudBlue billing system.

Basically, you will need to do the following:

1. Create and configure a project in the CloudBlue Connect vendor portal.
2. Create a virtual machine in a cloud. Install, configure, and start the connector service inside the virtual machine. This service integrates with the Connect API to retrieve order requests and provision ordered subscriptions for Virtuozzo Hybrid Infrastructure.

Important

To be able to connect to Virtuozzo Hybrid Infrastructure, the **Compute API** traffic type must be added to a network accessible from the created virtual machine.

3. Test creating and managing assets, that are customer projects, in the CloudBlue Connect vendor portal.

2 Creating products

A product contains all services that a vendor exposes for sale, including product items, sales models, and requirements to product orders and fulfillment phase.

To create a new product, do the following:

1. Go to **Products** and click **+ Create product**.
2. In the **Create product** window, enter a product name and select **Infrastructure** from the **Category** drop-down list. Then, click **Create**.

Create product

Name *
My product

Your product ID will be generated automatically. 10 / 32

Category *
Infrastructure

CANCEL CREATE

The product ID will be automatically generated.

2.1 Configuring general information

On the product's **General** page, you can do the following:

1. Click **Edit** next to the product name to change the product name and category or add a product icon and a short description.
For an icon, the recommend format is .png with a transparent background.
2. Click **Edit** on the **Overview** tab to add a product description.
3. Click **+ Add** on the **Media** tab to add one or more media files for marketing purposes.
4. Click **Edit** on the **Capabilities** tab to add various capabilities that automate certain processes in the order and usage flows.

For the pay-as-you-go model, enable **Pay-as-you-go** and select the reporting schema.

Edit capabilities

Pay-as-you-go
Product has pay-as-you-go capability, where the Vendor is required to periodically submit Usage Files to the Provider.

Reporting Schema
Implemented schema is explicitly declared in the product definition. One product implements only one schema.

TR
Multi-Tiers Rated

CR
Cost Rated

PR
Price Rated

QT
Quantity

Dynamic Items
Product reports dynamic items in the Usage File, i.e. the ones that were not pre-declared in the Product Definition.

CANCEL SAVE

2.2 Creating product items

Product items are compute resources in Virtuozzo Hybrid Infrastructure that customers order and pay for: CPU, RAM, storage, floating IP addresses, load balancers and Kubernetes clusters.

Product items can be defines for two billing models:

- A reservation model offers provisioning limited amount of compute resources.
- A pay-as-you-go model offers provisioning unlimited resources and charging them according to daily usage reports.

For the reservation model, do the following:

1. On the product page, go to the **Items > Reservation** tab, remove the default items and click **+ Create item**.
2. In **Create item - Step 1 General**, enter an item name, manufacturer part number, and description.

For the manufacturer part number, refer to the table below.

Resource	Manufacturer part number
CPU	CPU_limit
RAM	RAM_limit

Storage	Storage_limit
Floating IP addresses	floating_ip
Load balancers	lbaas_limit
Kubernetes clusters	k8saas_limit

Name *
CPU

Manufacturer Part Number *
CPU_limit

Description *
CPU_limit

Parent Item *
-

Leave the default value in the **Parent item** field and click **Next**.

3. In **Create item - Step 2 Type**, select **One Time** in the **Billing period** field and units in the **Unit** field:

- For RAM and storage, select **Gb**
- For other compute resources, select **Units**

Billing Period
One Time

Unit
Units

Click **Create**.

After adding all the six compute resources, you will have the following list.

Items		RESERVATION	PAY AS YOU GO	+ CREATE ITEM		
Name	Billing Period	MPN	Unit	Status		
CPU PRD-263-056-411-0004	Onetime	CPU_limit	Units	Draft		
RAM PRD-263-056-411-0005	Onetime	RAM_limit	Gb	Draft		
Storage PRD-263-056-411-0003	Onetime	Storage_limit	Gb	Draft		
Floating IPs PRD-263-056-411-0006	Onetime	floating_ip_limit	Units	Draft		
LBaaS PRD-263-056-411-0007	Onetime	lbaas_limit	Units	Draft		
K8SaaS PRD-263-056-411-0008	Monthly	k8saas_limit	Units	Draft		

For the pay-as-you-go model, do the following:

1. On the product page, go to the **Items > Pay as you go** tab, click + **Create item**.

Important

Make sure you have the **Pay-as-you-go** capability enabled on the product's **General > Capabilities** tab.

2. In **Create item - Step 1 General**, enter an item name, manufacturer part number, and description.

For the manufacturer part number, refer to the table below.

Resource	Manufacturer part number
CPU	CPU_consumption
RAM	RAM_consumption
Storage	Storage_consumption
Floating IP addresses	Floating_ip_consumption
Load balancers	LB_consumption
Kubernetes clusters	K8S_consumption

Name *
CPU_consumption

Manufacturer Part Number *
CPU_consumption

Description *
CPU_consumption

Click **Next**.

3. In **Create item - Step 2 Type**, select **Integer (Example: 42)** in the **Precision** field and **Unit*H** in the **Unit** field.

Precision
Integer (Example: 42)

Unit
Unit*H

Click **Create**.

After adding all the six compute resources, you will have the following list.

Items		RESERVATION	PAY AS YOU GO			+ CREATE ITEM
Name	MPN	Unit	Precision	Status		
CPU consumption PRD-135-150-751-0001	CPU_consumption	Unit*H	Integer Example: 42	Published		
RAM consumption PRD-135-150-751-0002	RAM_consumption	Unit*H	Integer Example: 42	Published		
Storage consumption PRD-135-150-751-0003	Storage_consumption	Unit*H	Integer Example: 42	Published		
Floating IP consumption PRD-135-150-751-0004	Floating_IP_consumption	Unit*H	Integer Example: 42	Published		
Load balancers count PRD-135-150-751-0005	LB_consumption	Unit*H	Integer Example: 42	Published		
Kubernetes Clusters count PRD-135-150-751-0006	K8S_consumption	Unit*H	Integer Example: 42	Published		

2.3 Creating product parameters

Product parameters are used to create a product order and to fulfill a product request. You can create three types of parameters:

- Configuration parameters are metadata specified during the product configuration. They can be assigned to the product in general, product item, and related marketplace.
- Order parameters are specified by customers when ordering the product.
- Fulfillment parameters are specified by the vendor when fulfilling a product request.

For Virtuozzo Hybrid Infrastructure, you need to add the following parameters:

Parameter	ID	Phase
Item limit	item_limit	Configuration
Project name	project	Ordering
User name	user	Ordering
User password	password	Ordering
Domain name	domain_name	Fulfillment
Domain ID	domain_id	Fulfillment
Project ID	project_id	Fulfillment
User ID	user_id	Fulfillment

To create a parameter, do the following:

1. On the product page, go to **Parameters** and click **+ Create parameter**.
2. In **Create parameter — Step 1 Type**, select **Single line text** to be able to enter a value for the parameter in a text line. Click **Next**.
3. In **Create parameter — Step 2 Phase**, select the phase where the parameter will be used and click **Next**.

For the parameter phase, refer to the table above.

4. In **Create parameter — Step 3 Scope**, select **Asset** and click **Next**.

- In **Create parameter — Step 4 Constrains**, enable **Required** to make the parameter mandatory. Click **Next**.
- In **Create parameter — Step 5 Details**, enter the parameter ID, title, and description. For the parameter ID, refer to the table above.

ID *
 project
 Must be unique for this product. 7 / 64

Title *
 Project name
 Used as a label for inputs. 12 / 100

Description *
 Project name
 Used as hint for inputs. 12 / 100

Click **Create**.

- In **Create parameter — Step 6 Summary**, review the parameter summary and click **Close**.

After adding all the product parameters, you will have the following list:

Parameters + CREATE PARAMETER

Parameters are additional pieces of information that are required to complete a purchase request. Some examples of parameters include shipping address, activation email, and etc. In the form below, you are able to configure these parameters. The parameters will be requested from the consumer while processing the purchase request.

Name ▾	Description	Phase ▾	Scope ▾	Type ▾	Constraints ▾
Project project	Project name	Ordering	Asset	Single line text	0
User name user	Project admin user name	Ordering	Asset	Single line text	0
Password password	Admin user password	Ordering	Asset	Single line text	0
Domain name domain_name	Domain name	Fulfillment	Asset	Single line text	0
Domain ID domain_id	Domain ID	Fulfillment	Asset	Single line text	0
Project ID project_id	Project ID	Fulfillment	Asset	Single line text	0
User ID user_id	User ID	Fulfillment	Asset	Single line text	0
Item limit item_limit	Item limit	Configuration	Item	Single line text	0

2.4 Defining configuration parameters

On the product's **Configuration** page, you can manage parameters associated with the configuration phase. Virtuozzo Hybrid Infrastructure has only one configuration parameter, item limit, which enables defining maximum resource limits for the reservation model.

To define the resource limits, do the following:

1. On the **Configuration** page, click the pencil icon next to the value you want to change.

Configuration

Parameter	Scope	Item	Marketplace	Value
Item limit item_limit	Item	Storage PRD-263-056-411-0003	—	100 Single line text
Item limit item_limit	Item	CPU PRD-263-056-411-0004	—	100 Single line text
Item limit item_limit	Item	RAM PRD-263-056-411-0005	—	100 Single line text
Item limit item_limit	Item	Floating IPs PRD-263-056-411-0006	—	100 Single line text
Item limit item_limit	Item	LBaaS PRD-263-056-411-0007	—	100 Single line text
Item limit item_limit	Item	K8SaaS PRD-263-056-411-0008	—	20 Single line text

2. In the **Edit value** window, set a new value and click **Save**.

Edit value

Item limit
200

CANCEL SAVE

3. Repeat the steps for each item you need to modify.

3 Enabling integration

To enable integration with CloudBlue Connect, first deploy a CentOS 7 virtual machine in any cloud environment, then install the connector service inside it as follows:

1. Install the following packages:

```
yum install epel-release.noarch
yum install centos-release-openstack-stein.noarch
```

2. Install the cloudblue-connector package:

```
yum install <path_to_the_package>/cloudblue-connector-<version>.v17.noarch.rpm
```

3. Install the Connect SDK:

```
easy_install connect-sdk==20.2
```

If you want to use flat billing, do the following:

1. Copy the configuration file example to config.json and open the latter for editing:

```
cp /etc/cloudblue-connector/config.json.example /etc/cloudblue-connector/config.json
vi /etc/cloudblue-connector/config.json
{
  "infraKeystoneEndpoint": "https://192.168.1.40:5000/v3",
  "infraDomain": "Default",
  "infraProject": "admin",
  "infraUser": "vstorage-service-user",
  "infraPassword": "*****",
  "apiEndpoint": "https://api.connect.cloud.im/public/v1",
  "apiKey": "ApiKey SU-469-692-689:*****",
  "products": ["PRD-063-065-206", "PRD-022-814-775"],
  "templates": {
    "PRD-022-814-775": {"grant": "TL-699-973-660", "revoke": "Access to VDC has
been revoked"},
    "PRD-063-065-206": {"grant": "TL-101-949-609", "revoke": "Access to VDC has
been revoked"}
  }
}
```

2. Change the default parameters:

- in "infraKeystoneEndpoint", replace the example IP address with the IP address of the Virtuozzo Hybrid Infrastructure cluster that you want to connect to
- in "infraDomain", "infraProject", "infraUser", and "infraPassword", change the domain, project, and user credentials to the ones of a Virtuozzo Hybrid Infrastructure system administrator
- in "apiEndpoint", specify the API endpoint to interact with the Connect API copied from the vendor portal on the **Extensions > General** page

Extensions

- General**
- Tokens
- Webhooks

General

API provides integrations to external systems such [documentation](#)

Use this endpoint to interact with the Connect API

API endpoint
<https://api.connect.cloud.im/public/v1>
 Use this endpoint to interact with the API

- in "apiKey", specify the API key copied from the vendor portal on the **Extensions > Tokens** page

Label	Created	Requestor	Type	API Key/Handle	Status
custom-label <small>SU-827-652-570</small>	06/30/2020 <small>11:45 AM</small>	user@example.com	Custom <small>EXT-000</small>	***** <small>*****</small>	● Active ⋮

- in "products", specify product IDs copied from the vendor portal on the **Products** page

Products

Name ▼

WERED [VDC Reservation model](#)
rtuoz PRD-263-056-411

[VDC Pay as you go model](#)
PRD-267-233-715

- in "templates", specify template IDs for each product copied from the vendor portal on the **Products > product > Embedding** page. Click the **Templates** tab and go to the **Activation tile templates** section

3. Run the command:

```
cloudblue-fulfillments
```

4. Enable and start the cloudblue-fulfillments service:

```
systemctl enable cloudblue-fulfillments
systemctl start cloudblue-fulfillments
```

If you want to use the pay-as-you-go model, do the following:

1. Copy the configuration usage example to config-usage.json and open the latter for editing:

```
cp /etc/cloudblue-connector/config-usage.json.example /etc/cloudblue-connector/config-usage.json
vi /etc/cloudblue-connector/config-usage.json
{
  "infraKeystoneEndpoint": "https://192.168.1.40:5000/v3",
  "infraDomain": "Default",
  "infraProject": "admin",
  "infraUser": "vstorage-service-user",
  "infraPassword": "****",
  "apiEndpoint": "https://api.connect.cloud.im/public/v1",
  "apiKey": "ApiKey SU-469-692-689:*****",
  "products": ["PRD-063-065-206"],
  "templates": {
    "PRD-263-056-411": {"grant": "TL-304-029-298", "revoke": "Access to VDC has been revoked"},
  }
}
```

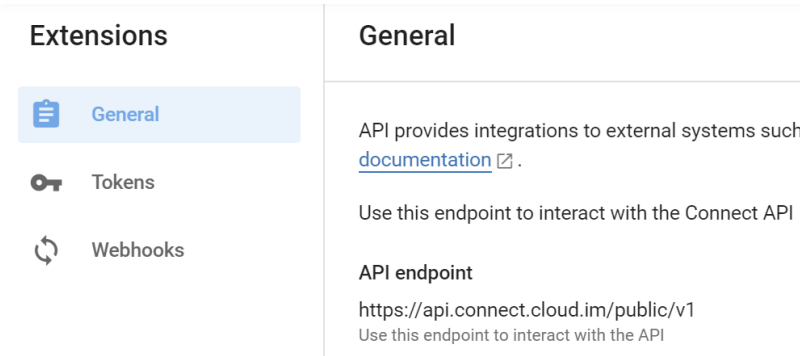
```

    "PRD-063-065-206": {"grant": "TL-101-949-609", "revoke": "Access to VDC has
been revoked"}
  }
}

```

2. Change the default parameters:

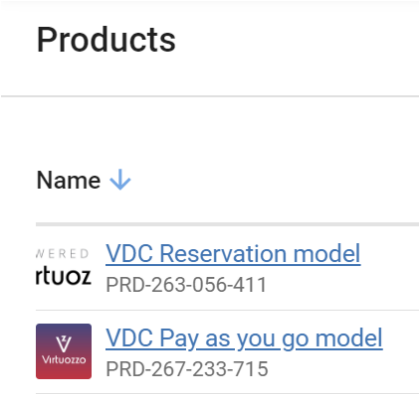
- in "infraKeystoneEndpoint", replace the example IP address with the IP address of the Virtuozzo Hybrid Infrastructure cluster that you want to connect to
- in "infraDomain", "infraProject", "infraUser", and "infraPassword", change the domain, project, and user credentials to the ones of a Virtuozzo Hybrid Infrastructure system administrator
- in "apiEndpoint", specify the API endpoint to interact with the Connect API copied from the vendor portal on the **Extensions > General** page



- in "apiKey", specify the API key copied from the vendor portal on the **Extensions > Tokens** page

Label	Created	Requestor	Type	API Key/Handle	Status
custom-label SU-827-652-570	06/30/2020 11:45 AM	user@example.com	Custom EXT-000	*****	Active

- in "products", specify the ID of the product with the pay-as-you-go billing model. Copy the product ID from the vendor portal on the **Products** page



- in "templates", specify template IDs for each product copied from the vendor portal on the **Products > product > Embedding** page. Click the **Templates** tab and go to the **Activation**

tile templates section

The screenshot shows the 'tile templates' section of a management console. On the left is a sidebar with the user 'WERED rtuoz' and a dropdown menu for 'VDC Reservation mo...' with 'Master version' selected. Below this are navigation icons for 'General', 'Items', 'Parameters', 'Embedding' (highlighted), 'Configuration', 'Versions', 'Preview', and 'GTM Builder'. The main content area is titled 'Embedding' and contains two sections: 'Additional information is req...' with ID 'TL-610-770-153' and an 'EDIT' button; and 'Activation tile templates' with a description: 'Customized text to be shown in the inf variable substitution works. Use drag & drop'. Below this is a preview of a 'Virtual datacenter' template with variables for 'Link', 'User', and 'domain_name'. At the bottom is a 'Default Activation Template' with ID 'TL-304-029-298' and an 'EDIT' button.

3. Enable and start the cloudblue-usage service:

```
systemctl enable cloudblue-usage
systemctl start cloudblue-usage
```



4 Creating assets

An asset represents a product instance provisioned to a customer. In this case, it is a customer project with defined quotas in Virtuozzo Hybrid Infrastructure.

You can create an asset for testing purposes as follows:


1. In the vendor portal, go to the **Assets** page and click **+ Create asset**.
2. In **Create Asset — Step 1 Introduction**, read about assets and click **Next**.
3. In **Create Asset — Step 2 Product**, select a product and click **Next**.

Select a product

 VDC Reservation model rtuoz PRD-263-056-411	The service directly enables ser...	<input checked="" type="radio"/>
 VDC Pay as you go model PRD-267-233-715	The service directly enables ser...	<input type="radio"/>

4. In **Create Asset — Step 3 Marketplace**, select a marketplace available for the provider and click **Next**.

Select a marketplace

 test marketplace MP-41148	ACME Provider PA-473-705	<input checked="" type="radio"/>
--	-----------------------------	----------------------------------

5. In **Create Asset — Step 4 Tiers**, select the tier configuration depending on the tier model of your marketplace and click **Next**.

Tiers

T1
This Tier Config needs to be created in the single tier model, i.e. only direct reseller of the customer needs to be stored in the Tier Accounts data.

T1+T2
This Tier Config needs to be created in the two tier model, i.e. both "reseller of the reseller" as well as "direct reseller" of the customer need to be stored in the Tier Accounts data.

6. (Optional, appears only if you have chosen T1+T2 reseller tiers model) In **Create Asset — Step 5 T2 Account**, choose a T2 reseller account from the drop-down list or create a new one by clicking **New**. Then click **Next**.

7. In **Create Asset — Step 6 T1 Account**, choose a T1 reseller account from the drop-down list or create a new one by clicking **New**. Then click **Next**.
8. In **Create Asset — Step 7 Customer**, choose a customer from the drop-down list or create a new one by clicking **New**. Then click **Next**.
9. In **Create Asset — Step 8 Asset Items**, click **+ Add Items**.
In a window that opens, select all items that represent compute resources in Virtuozzo Hybrid Infrastructure and click **Select**.

Select Items

<input checked="" type="checkbox"/>	Name	MPN	Type/Period	Unit
<input checked="" type="checkbox"/>	CPU	CPU_limit	Reservation Onetime	Units
<input checked="" type="checkbox"/>	RAM	RAM_limit	Reservation Onetime	Gb
<input checked="" type="checkbox"/>	Storage	Storage_limit	Reservation Onetime	Gb
<input checked="" type="checkbox"/>	Floating IPs	floating_ip_limit	Reservation Onetime	Units
<input checked="" type="checkbox"/>	LBaaS	lbaas_limit	Reservation Onetime	Units
<input checked="" type="checkbox"/>	K8SaaS	k8saas_limit	Reservation Monthly	Units

CANCEL SELECT

For the reservation model, change the quantity for items you need. For the pay-as-you-go model, the item quantity cannot be defined. Then click **Next**.

Items [RANDOMIZE](#) [CLEAR](#)

Name	MPN	Quantity	
CPU PRD-263-056-411-0004	CPU_limit	<input type="text" value="5"/>	Units
RAM PRD-263-056-411-0005	RAM_limit	<input type="text" value="42"/>	Gb
Storage PRD-263-056-411-0003	Storage_limit	<input type="text" value="10"/>	Gb
Floating IPs PRD-263-056-411-0006	floating_ip_limit	<input type="text" value="60"/>	Units
LBaaS PRD-263-056-411-0007	lbaas_limit	<input type="text" value="25"/>	Units
K8SaaS PRD-263-056-411-0008	k8saas_limit	<input type="text" value="30"/>	Units

Note

If you are not going to use all of the items, you can exclude unnecessary ones from the asset later by setting their quantity to 0.

10. In **Create Asset — Step 9 Attributes**, leave the default external ID and UUID, and click **Next**.
11. In **Create Asset — Step 10 Parameters**, specify the project name and user credentials for a project and user that will be created in Virtuozzo Hybrid Infrastructure. Then click **Create**.

Asset Parameters

Please specify values of the ordering phase parameters for the asset. You can skip assignment of values (if not required) to simulate an unattended ordering experience.

Values

Project *

myproject

User name *

myuser

Password *

mypassword

12. In **Create Asset — Step 11 Summary**, review the created objects and their current statuses. Click **Close** to return to the list of assets.

After the asset is created, its status is changed to **Active**. You can view the asset details by clicking its ID. The asset page also provides the link to the VDC login page. The **Requests** tab contains all requests associated with this asset.

← Asset details

Status	Asset	Product	Marketplace
● Active	AS-9322-9160-3675 Preview One-time	<small>WERED</small> rtuoz VDC Reservation model PRD-263-056-411	 test marketplace MP-41148

CONTROL PANEL RESERVATION PAY AS YOU GO PARAMETERS DETAILS TIERS REQUESTS

We are happy to provide you the Cloud Service - an ultimate solution for your company. Stop using the legacy on-premises solution on your computer. Move to the cloud with our help.

Virtual datacenter

Link: <https://vip-sup.sw.ru:8800/login/TA-4985-6783-0639>

User: 45674567

5 Managing assets

5.1 Provider actions

Providers can suspend assets due to administrative purposes or payment issues. Suspending an asset temporarily disables its items. In a suspended state, an asset item does not operate but can be resumed without any data loss. Providers can also create billing requests of assets with the reservation model. A billing request provides information about billing of item associated with the asset for a particular period.

To perform any of these actions, go to the asset details page, click **Actions** and select an action from the **Provider Actions** list.

5.2 Customer actions

Customers can change resource reservation by changing asset items and cancel subscription by canceling an asset.

To change asset items, do the following:

1. Go to the asset details page, click **Actions** and select **Change**.
2. In **Change Asset - Step 1 Overview**, read the information and click **Next**.
3. In **Change Asset - Step 2 Asset Items**, set new quantity values for the desired items and click **Create change request**.

Items

Name	Old Quantity		New Quantity	
Storage PRD-263-056-411-0003	20	→	<u>100</u>	Gb
CPU PRD-263-056-411-0004	20	→	<u>30</u>	Units
RAM PRD-263-056-411-0005	20	→	<u>60</u>	Gb
Floating IPs PRD-263-056-411-0006	20	→	<u>20</u>	Units

4. In **Change Asset - Step 3 Summary**, check the asset and request status and click **Close**.

If an asset is no longer needed, a customer can cancel it as follows:

1. Go to the asset details page, click **Actions** and select **Cancel**.
2. In **Cancel asset — Step 1 Overview**, read the information and click **Create cancel request**.
3. In **Cancel asset — Step 2 Summary**, check the asset and fulfillment request status and click **Close**.

Once an asset is canceled, its status becomes **Terminated** and the asset cannot be processed. A new fulfillment request must be created in order to proceed.

In Virtuozzo Hybrid Infrastructure, the asset project is disabled after an asset is canceled.

6 Viewing resource usage reports

Assets created for the pay-as-you-go model generate daily usage reports and send them in the .xlsx format. You can view these reports as follows:

1. Go to the **Usage** page and click the needed report

Usage File	Schema	Created	Product	Provider	Marketplace	Record statistics	Status
Report For AS-4777-9200-1431 UF-2020-06-2785-9662	QT Quantity	06/24/2020 6:39 AM	VDC Pay as you go model PRD-267-233-715	None PA-000-000	None MP-00000	6 Uploaded Validated Pending Accepted Closed	Deleted
Report For AS-6731-8024-3055 UF-2020-07-0237-7058	QT Quantity	07/07/2020 2:28 AM	VDC Pay as you go model PRD-267-233-715	None PA-000-000	None MP-00000	6 Uploaded Validated Pending Accepted Closed	Ready
Report For AS-6731-8024-3055 UF-2020-07-0517-8225	QT Quantity	07/08/2020 2:42 AM	VDC Pay as you go model PRD-267-233-715	None PA-000-000	None MP-00000	6 Uploaded Validated Pending Accepted Closed	Ready

2. On the report details page, download the processed usage file by clicking its name.

← Usage file details Report for AS-6731-8024-3055 2020-07-07

Status	ID	Product	Provider	Marketplace
Ready	UF-2020-07-0237-7058 Preview	VDC Pay as you go model PRD-267-233-715	None PA-000-000	None MP-00000

GENERAL PREVIEW

Distribution Contract	Period (UTC)	Schema	Currency	Records statistics
None CRD-00000-00000-00000	—	QT Quantity	—	6 6 — — — Uploaded Validated Pending Accepted Closed

Description

External ID Visible only for you

Files [RE-UPLOAD NORMALIZED USAGE FILE](#)

Normalized usage file	Processed usage file
UF-2020-07-0237-7058.xlsx	UF-2020-07-0237-7058-PROCESSED.xlsx

3. Open the file and go to the **records** tab. Review the usage statistics.

item_search_value	quantity	start_time_utc	end_time_utc
CPU_consumption	27	2020-07-06 00:00:00	2020-07-07 00:00:00
Storage_consumption	1260	2020-07-06 00:00:00	2020-07-07 00:00:00
RAM_consumption	54	2020-07-06 00:00:00	2020-07-07 00:00:00
Floating_IP_consumption	0	2020-07-06 00:00:00	2020-07-07 00:00:00
LB_consumption	0.0000	2020-07-06 00:00:00	2020-07-07 00:00:00
K8S_consumption	0.0000	2020-07-06 00:00:00	2020-07-07 00:00:00

7 Troubleshooting

7.1 Troubleshooting integration issues

If you have encountered an integration issue, log in to the CentOS 7 virtual machine and check the status of the `cloudblue-fulfillments` service. It should be enabled and active. For example:

```
# systemctl status cloudblue-fulfillments
● cloudblue-fulfillments.service - Connect to backend, fulfillments service
Loaded: loaded (/usr/lib/systemd/system/cloudblue-fulfillments.service; enabled; vendor preset: disabled)
Active: active (running) since Fri 2020-07-17 07:58:21 EDT; 10s ago
```

For the pay-as-you-go model, also check the `cloudblue-usage` service.

The service logs can be viewed by using the `journalctl` utility.

7.2 Troubleshooting asset issues

If you have problems with assets in the vendor portal, you can check the corresponding failed requests. Do the following:

1. Go to the **Requests** tab on the asset page and click the request with the **Failed** status.
2. On the request details page, check the **Notes** panel for the problem root cause. For example:

NOTES CO-599-212-631 ><

July 12, 2020

Test user

Request PR-4056-1015-0856-001 created. State set to Pending.

5:32 AM

Test user

State changed to failed

5:33 AM

Reason: ERROR: REQUESTED LIMITS ARE HIGHER THEN HARD LIMITS