

# Cloudera Data Warehouse Private Cloud Environments

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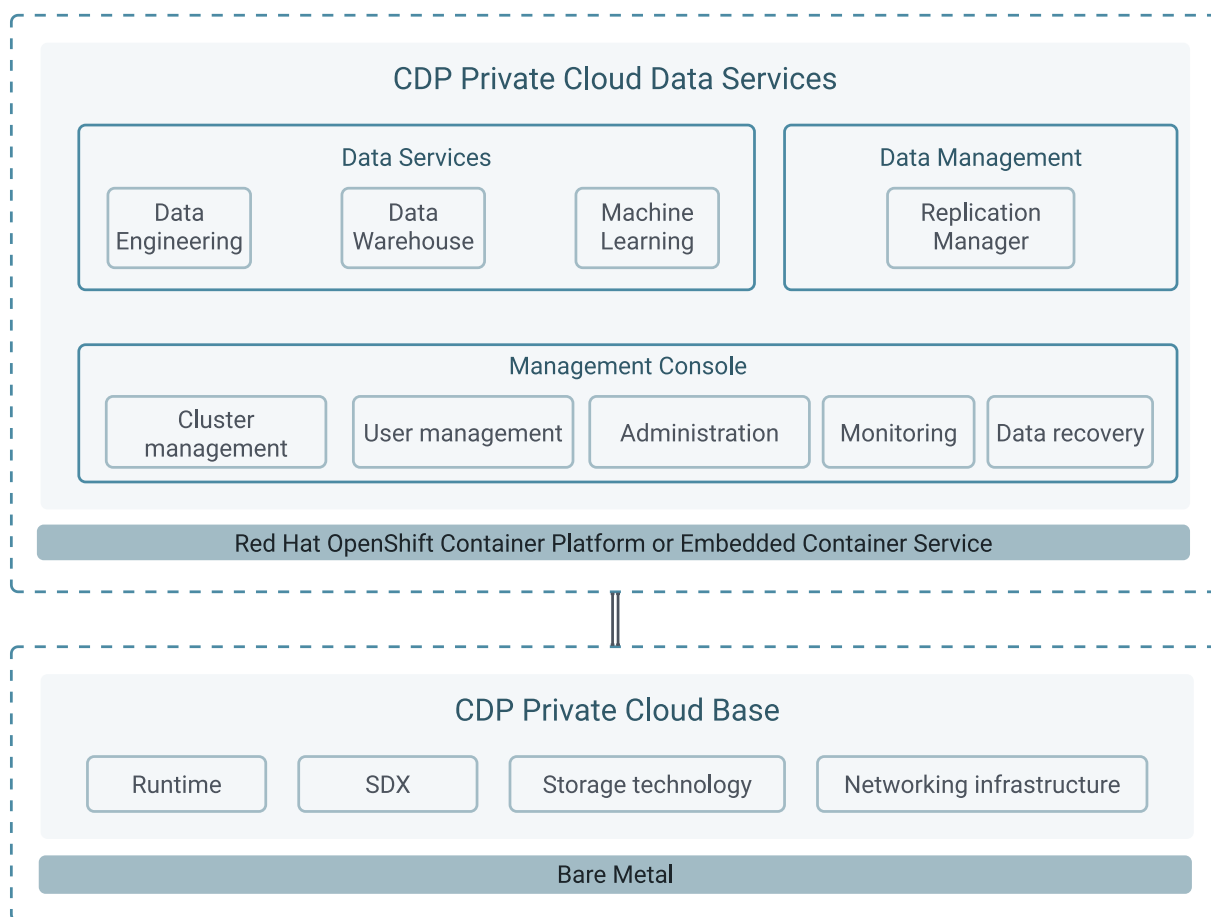
## About Private Cloud environments

An environment is a logical entity that represents the association of your Private Cloud user account with compute resources. Using the compute resources of the environment, you can provision and manage Cloudera Data Warehouse (CDW), Cloudera Data Engineering (CDE), or Cloudera Machine Learning (CML) workloads.

For a CDP Private Cloud deployment, you can configure the environment on an OpenShift Container Platform or an Embedded Container Service (ECS) cluster. Deploying CDP Private Cloud Data Services (CDW, CDE, and CML) on OpenShift requires you to deploy and manage the Kubernetes infrastructure. ECS service creates and manages an embedded Kubernetes infrastructure for use with the CDP Private Cloud Experiences. To deploy CDP Experiences on ECS clusters, you only need to provide hosts on which you want to install the service and Cloudera Manager sets up an ECS cluster using an embedded Kubernetes service and provides a framework to manage and monitor the cluster.

Much of the installation and deployment configuration for private cloud is performed before you register environments using the Management Console. However, in addition to the steps described in the installation guide, you must perform additional configurations to activate an environment so you can use it with the CDW service.

The following diagram shows the components of CDP Private Cloud:



For more details about environment requirements and how to register an environment so CDP can access Kubernetes clusters on your OpenShift or ECS deployment, see [CDP Private Cloud Environments](#).

### Related Information


[Activating OpenShift environments](#)

[Activating Embedded Container Service environments](#)

## Viewing environment details

You can view information about an activated environment, such as when it was created and last updated, or how many Database Catalogs and Virtual Warehouses use the environment from the Cloudera Data Warehouse (CDW) web interface.

### Procedure

1. Log in to the Data Warehouse service as DWAdmin.
2. Expand the Environments column by clicking the More... menu on the **Overview** page.
3. Locate the environment you want to view and then click the  **Edit** .  
Environment details for the selected environment are displayed.

## Creating custom pod configurations for Impala Virtual Warehouses

You can configure the resources used by Impala Virtual Warehouses in Cloudera Data Warehouse (CDW) Private Cloud environments to optimize Impala performance or to control resource usage in the environment.


### About this task

When you create a Virtual Warehouse, CDW allocates standard resources to the Warehouses that are suitable for most workloads. You can control the size of the Virtual Warehouse at the time of creation by choosing the number of nodes to be used. By using custom pod configurations, you can also change the resources used by the critical Impala components, such as the coordinators, executors, and catalog daemons to pack a particular number of pods into a Kubernetes node or to create extra-large daemons to handle specific workloads.

### Before you begin

Ensure that the Customize pod sizes option is selected on the **Advanced Configuration Advanced Settings** page.

### Procedure

1. Log in to the Data Warehouse service as a DWAdmin.
2. Go to your environment and click  **Edit** .  
The **Environment Details** page is displayed.

3. Click the POD CONFIGURATIONS tab.

The following two read-only options are displayed: Cdw Defaults and 1 x Node. You can create a copy of these options and customize them.

GENERAL DETAILS   CONFIGURATIONS <b>POD CONFIGURATIONS</b>		
2 Read Only, 0 Mutable		
Name	Description	
1 X Node	Machine generated estimates for using all resources of a Node	Actions
Cdw Defaults <b>Default</b>	The Default CDW Configuration	Actions

- The Cdw Defaults option is selected by default. CDW uses default values for the pods if a specific pod configuration is not used.
- The 1 x Node option calculates and shows the resources based on the attributes of a random node from a cluster, assuming all of them are the same.

A pod configuration is a named resource that is configured at the environment level.

- Click Actions corresponding to the configuration you want to copy and customize and click Make A Copy.
- Specify a name for the new configuration in the Cloned Config Name field. Optionally, specify a description and click Create New Config.

» 1 x Node

Make A Copy

Delete

Name: 1 x Node (readonly)

Description :

Machine generated estimates for using all resources of a Node

☐ Set As Default

Cloned Config Name:

Name of new config

Description for new config:

Description for new con:

Create New Config

A new pod configuration is created, which you can now customize.

**6.** Specify the values for the following parameters under the Coordinator section:

- Memory
- CPUs
- Xmx (maximum memory allocation pool for a Java Virtual Machine)
- Xms (initial memory allocation pool for a Java Virtual Machine)
- AC Slots (admission\_control\_slots flag)
- Cache size (size of the data cache)
- Scratch size (limit of Impala scratch space)
- Overhead size (size for resources used by tools run by the containers)

>> test

Make A CopyDelete

Name:           test

Description :

☐ Set As Default

▼ Coordinator

Memory

117760

CPUS

28

Xmx

29G

Xms

2G

AC Slots

128

Cache size


200GiB

Scratch size

300GiB

Overhead size

58GiB

 **Important:** By default, the total space allocated for scratch, cache, and overhead is 600 GiB, with scratch=280GiB, cache=280GiB, and overhead=40GiB. You can allocate space for these components in the following format: [\*\*\*QUANTITY\*\*\*][\*\*\*UNIT\*\*\*].

The quantity can be a decimal number, separated by a period (.). For example, 240.5GiB. The unit must be in GiB (gibibytes).

1 GiB (gibibyte) equals 1.074 GB (gigabytes).



7. Specify the values for the following parameters under the Executor section:

- Memory
- CPUS
- Xmx (maximum memory allocation pool for a Java Virtual Machine)
- Xms (initial memory allocation pool for a Java Virtual Machine)
- AC Slots (admission\_control\_slots flag)
- Cache size (size of the data cache)
- Scratch size (limit of Impala scratch space)
- Overhead size (size for resources used by tools run by the containers)

### ▼ Executor

Memory

116736

CPUS

14

Xmx

4G

Xms

2G

AC Slots

36

Cache size

200GiB

Scratch size

300GiB

Overhead size

58GiB



**Note:** By default, the total space allocated for scratch, cache, and overhead is 600 GiB, with scratch=280GiB, cache=280GiB, and overhead=40GiB. You can allocate space for these components in the following format: `[***QUANTITY***][***UNIT***]`.

The quantity can be a decimal number, separated by a period (.). For example, 240.5GiB. The unit must be in GiB (gibibytes).

1 GiB (gibibyte) equals 1.074 GB (gigabytes).

8. Specify the values for the following parameters under the Catalog section:

- Memory
- CPUS
- Xmx (maximum memory allocation pool for a Java Virtual Machine)
- Xms (initial memory allocation pool for a Java Virtual Machine)

#### ▼ Catalog

Memory

8192

CPUS

1

Xmx

6G

Xms

2G

9. Specify the values for the following parameters under the Default Settings section:

- MaxQueryMemLimit
- MinQueryMemLimit
- mt\_dop

#### ▼ Default Settings

MaxQueryMemLimit

53687091200

MinQueryMemLimit

2147483648

mt\_dop

12

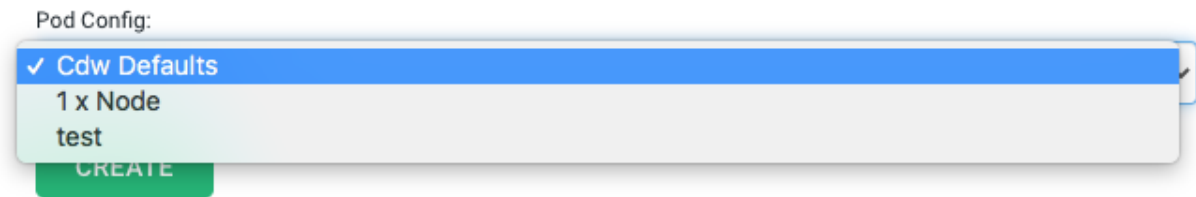
10. Make the configuration default by selecting the **Set As Default** option.

This makes a pod configuration the default configuration at the environment level.

11. Click Apply Changes under the **POD CONFIGURATION** tab to save the custom settings.

The Configuration update initiated message is displayed.

The new pod configuration becomes available in the Pod Config drop-down menu as shown in the following image. You can select this Impala pod configuration while creating a new Impala Virtual Warehouse.



### Results

While adding a new Impala Virtual Warehouse, you can select the Pod Configuration to be used for resource allocation. The default value is "Cdw Defaults", but you can select other configurations available in your environment that you created using these steps.