CDP Private Cloud Data Services 1.5.4

Managing the Embedded Container Service (ECS)

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https://docs.cloudera.com/

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Contents

The Embedded Container Service (ECS)

Cloudera Manager provides tools for managing and monitoring the CDP Private Cloud Embedded Container Service.

The Embedded Container Service (ECS) service enables you to run CDP Private Cloud Data Services by creating container-based clusters in your data center. In addition to the option to use OpenShift, which requires that you deploy and manage the Kubernetes infrastructure, you can also deploy a Embedded Container Service cluster, which creates and manages an embedded Kubernetes infrastructure for use with CDP Private Cloud Data Services. Installing, configuring, and managing OpenShift is not required. You only need to provide hosts on which to install the service and Cloudera Manager sets up the Embedded Container Service cluster and also provides management and monitoring of the cluster.

When you create an Embedded Container Service cluster, two new services are added to the cluster:

- Embedded Container Service (ECS) service. The ECS service has two roles:
  - ECS Server -- runs on a single host in the Embedded Container Service cluster.
  - ECS Agent -- runs on all hosts except the host running the Server role in the Embedded Container Service Cluster.
- Docker service. The Docker service has a single role:
  - Docker Server -- runs on all hosts in the Embedded Container Service Cluster.

Configuring the Embedded Container Service

You use Cloudera Manager to configure the Embedded Container Service and clusters.

Procedure

1. Open the Cloudera Manager Admin Console
2. From the Home page, Click on the Embedded Container Service Cluster
3. Click the Hosts, ECS service, or the Docker service links.
4. Click the Configuration tab.
5. Use the Filters or Search functions to locate the configuration property you are looking for.
6. Enter your change.
7. Click Save Changes.

Related Information

Modifying Configuration Properties Using Cloudera Manager

Major RHEL Operating System upgrade on ECS hosts

After installing CDP Private Cloud Data Services on a particular RHEL OS, you can now upgrade RHEL OS to a new major version. For example, you can upgrade from RHEL 7.x to RHEL 9.x major version.

About this task

You must perform this task on all Embedded Container Service (ECS) hosts when you are ready for an OS upgrade.

Before you begin

Collect the following information:

- ECS hosts in the cluster. For example: host-1, host-2.

  Navigate to Cloudera Manager UI > ECS Cluster Name > HOSTS , to collect the host info.
- Version of the ECS running on cluster. For example: 1.5.2

  Navigate to Cloudera Manager UI > DATA SERVICES > Cluster Name , the cluster displays the Version at the bottom of the UI .
- Version of the Operating System (OS) running on those hosts. For example: RHEL 7.9
  - Login to all of the hosts in the ECS cluster by executing the following command:

    ```
    cat /etc/redhat-release
    ```
- Version of the upgraded OS. For example: RHEL 9.4

  Verify the ECS version supported on the upgraded OS version here: https://supportmatrix.cloudera.com/

Note: The prerequisites assume that your Cloudera Manager/CDH versions and OS version have either been upgraded or do not need to be upgraded and your ECS cluster is healthy. You must also be familiar with the RedHat upgrade steps to go from your installed version to your final version.

Shutdown of the ECS Cluster

Perform the following steps:

1. Log in to Cloudera Manager as an Administrator, then navigate to the ECS cluster.
2. Go to the Home Status tab.
3. Click the Actions menu to the right of the Embedded Container Service (ECS) cluster name and select Stop.
4. Click the Stop option in the confirmation screen.

   The **Command Details** window shows the progress of the services.
5. SSH into a ECS cluster host as a root user.
6. Verify the OS version by running the following command:

   ```
   cat /etc/redhat-release
   ```
7. Stop Cloudera Manager agent on all the ECS hosts, by executing the following command:

   ```
   systemctl stop cloudera-scm-agent
   ```
8. Uninstall Cloudera Manager agent packages on the ECS hosts by executing the following command:

   ```
   yum remove cloudera-manager-agent
   ```

Major OS Upgrade

Follow the RHEL OS Upgrade documentation for major OS upgrade procedure.

Note: Ensure to check the supported upgrade path for your RHEL OS version.

Verify the upgraded OS version on all ECS hosts by executing the following command:

```
cat /etc/redhat-release
```

Setup and install new Cloudera Manager agents

Perform the following steps on each host in your cluster:

1. If you have not installed before, install python 3.8 and other dependencies on the ECS host.

   Example: `yum install python3.8 -y`

2. Install the OS compatible Cloudera Manager agent packages.

   Example: RHEL 9 package instead of RHEL 7 through commands on the ECS hosts.

   - Change the baseurl= link in the cloudera-manager.repo to point to new RedHat version you upgraded to (from RedHat 7 to RedHat 9).

     Example: baseurl=https://archive.cloudera.com/p/cm7/7.11.3.0/redhat7/yum/

     ```
     vim /etc/yum.repos.d/cloudera-manager.repo
     ```

     Save the cloudera-manager.repo file.
   - To update repositories, execute:

     ```
     yum clean all
     ```
   - To verify the version is available, Example: 7.11.3.26-58725444.el9, execute the following command:

     ```
     yum list available | grep -i cloudera-manager
     ```
   - To install the Cloudera Manager Agent, execute the following command:

     ```
     yum install cloudera-manager-agent
     ```
   - To verify the correct version of the OS compatible Cloudera Manager agent installed, execute the following command:

     ```
      yum list installed | grep -i cloudera-manager-agent
     ```
3. Restore the Cloudera Manager agent config file, execute the following command:

   ```
   cp /etc/cloudera-scm-agent/config.ini.rpmsave /etc/cloudera-scm-agent/co
   nfig.ini)
   ```
4. Login to all the ECS host and then start the Cloudera Manager agent by executing the following command:

   ```
   systemctl start cloudera-scm-agent
   ```
5. To verify the status of the Cloudera Manager agents started, execute the following command:

   ```
   systemctl status cloudera-scm-agent
   ```
6. Log in to Cloudera Manager UI as an Administrator.
7. Verify that the Cloudera Manager displays all your hosts before starting ECS Cluster.

   Navigate to Cloudera Manager UI > ECS Cluster Name > HOSTS , to collect the host info.

   Note: Verify all the hosts show green indicating good health.

Start the ECS Cluster

1. To start the ECS cluster, go to the Home Status tab.
2. Click the Actions menu to the right of the Embedded Container Service cluster name and select Start.
3. Click the Start option.

   The **Command Details** window shows the progress of the services.

   Wait for all the pods to start. The wait time depends on the number of nodes in the cluster.
4. Navigate to ECS > WEB UI and try accessing: STORAGE UI, ECS WEB UI, and CONSOLE.

If you see a Vault sealed issue, after the start of the ECS service and if it does not unseal itself, then follow the step below to manually unseal it:

In the Cloudera Manager UI, Go to the ECS CLUSTER NAME > ECS SERVICE> ACTIONS > UNSEAL VAULT

Mixed mode RHEL Operating System upgrade on ECS hosts

After installing CDP Private Cloud Data Services on a particular RHEL OS, you can now upgrade RHEL OS on some of your hosts to a new major version. For example, in a 10 node cluster, you can upgrade any number of hosts from RHEL 7.x to RHEL 9.x major version and keep the other hosts, running RHEL 7.x.

About this task

You must perform this task on all Embedded Container Service (ECS) hosts when you are ready for an OS upgrade.

Before you begin

Collect the following information:

- ECS hosts in the cluster. For example: host-1, host-2.

  Navigate to Cloudera Manager UI > ECS Cluster Name > HOSTS , to collect the host info.
- Version of the ECS running on cluster. For example: 1.5.2

  Navigate to Cloudera Manager UI > DATA SERVICES > Cluster Name , the cluster displays the Version at the bottom of the UI .
- Version of the Operating System (OS) running on those hosts. For example: RHEL 7.9
  - Login to all of the hosts in the ECS cluster by executing the following command:

    ```
    cat /etc/redhat-release
    ```
- Version of the upgraded OS. For example: RHEL 9.4

  Verify the ECS version supported on the upgraded OS version here: https://supportmatrix.cloudera.com/

Note: The prerequisites assume that your Cloudera Manager/CDH versions and OS version have either been upgraded or do not need to be upgraded and your ECS cluster is healthy. You must also be familiar with the RedHat upgrade steps to go from your installed version to your final version.

Shutdown of the ECS Cluster and prepare nodes for OS upgrade

Perform the following steps to shutdown the ECS cluster:

1. Log in to Cloudera Manager as an Administrator, then navigate to the ECS cluster.
2. Go to the Home Status tab.
3. Click the Actions menu to the right of the Embedded Container Service (ECS) cluster name and select Stop.
4. Click the Stop option in the confirmation screen.

   The **Command Details** window shows the progress of the services.

Perform the following steps ONLY on the hosts you are upgrading:

1. SSH into a ECS cluster host as a root user.
2. Verify the OS version by running the following command:

   ```
   cat /etc/redhat-release
   ```
3. Stop Cloudera Manager agent on all the ECS hosts, by executing the following command:

   ```
   systemctl stop cloudera-scm-agent
   ```
4. Uninstall Cloudera Manager agent packages on the ECS hosts by executing the following command:

   ```
   yum remove cloudera-manager-agent
   ```

Major OS Upgrade

Follow the RHEL OS Upgrade documentation for major OS upgrade procedure.

Note: Ensure to check the supported upgrade path for your RHEL OS version.

Verify only the hosts you upgraded will show the new OS version on all ECS hosts by executing the following command:

```
cat /etc/redhat-release
```

Setup and install new Cloudera Manager agents

Perform the following steps on the hosts you upgraded in your cluster:

1. If you have not installed before, install python 3.8 and other dependencies on the ECS host.

   Example: `yum install python3.8 -y`
2. Install the OS compatible Cloudera Manager agent packages.

   Example: RHEL 9 package instead of RHEL 7 through commands on the ECS hosts.

   - Change the baseurl= link in the cloudera-manager.repo to point to new RedHat version you upgraded to (from RedHat 7 to RedHat 9).

     Example: baseurl=https://archive.cloudera.com/p/cm7/7.11.3.0/redhat7/yum/

     ```
     vim /etc/yum.repos.d/cloudera-manager.repo
     ```

     Save the cloudera-manager.repo file.
   - To update repositories, execute:

     ```
     yum clean all
     ```
   - To verify the version is available, Example: 7.11.3.26-58725444.el9, execute the following command:

     ```
     yum list available | grep -i cloudera-manager
     ```
   - To install the Cloudera Manager Agent, execute the following command:

     ```
     yum install cloudera-manager-agent
     ```
   - To verify the correct version of the OS compatible Cloudera Manager agent installed, execute the following command:

     ```
      yum list installed | grep -i cloudera-manager-agent
     ```
3. Restore the Cloudera Manager agent config file, execute the following command:

   ```
   cp /etc/cloudera-scm-agent/config.ini.rpmsave /etc/cloudera-scm-agent/config.ini)
   ```
4. Start the Cloudera Manager agent by executing the following command:

   ```
   systemctl start cloudera-scm-agent
   ```
5. To verify the status of the Cloudera Manager agents started, execute the following command:

   ```
   systemctl status cloudera-scm-agent
   ```
6. Log in to Cloudera Manager UI as an Administrator.

7. Verify that the Cloudera Manager displays all your hosts before starting ECS Cluster.

   Navigate to Cloudera Manager UI > ECS Cluster Name > HOSTS , to collect the host info.

   Note: Verify all the hosts show green indicating good health.

Start the ECS Cluster

1. To start the ECS cluster, go to the Home Status tab.
2. Click the Actions menu to the right of the Embedded Container Service cluster name and select Start.
3. Click the Start option.

   The **Command Details** window shows the progress of the services.

   Wait for all the pods to start. The wait time depends on the number of nodes in the cluster.
4. Navigate to ECS > WEB UI and try accessing: STORAGE UI, ECS WEB UI, and CONSOLE.

If you see a Vault sealed issue, after the start of the ECS service and if it does not unseal itself, then follow the step below to manually unseal it:

In the Cloudera Manager UI, Go to the ECS CLUSTER NAME > ECS SERVICE> ACTIONS > UNSEAL VAULT

Upgrading the RHEL Operating System to a new minor version

After installing CDP Private Cloud Data Services on a particular RHEL OS, you can now upgrade RHEL OS to a new minor version. For example, in a RHEL 8.x OS series, you can upgrade from RHEL 8.6 to RHEL 8.8 new minor version.

About this task

You must perform this task on all Embedded Container Service (ECS) hosts.

Before you begin

Verify the RHEL OS version by performing the following steps:

1. Log in to Cloudera Manager as an Administrator, then navigate to the ECS cluster.
2. Go to the Home Status tab.
3. Click the Actions menu to the right of the Embedded Container Service (ECS) cluster name and select Stop.
4. Click the Stop option in the confirmation screen.

   The **Command Details** window shows the progress of the services.
5. SSH into a ECS cluster host as a root user.
6. Verify the OS version by running the following command:

   ```
   cat /etc/redhat-release
   ```

Procedure

1. Upgrade RHEL from the installed version to the desired minor version on the ECS host. Use the operating system upgrade procedures provided by your RedHat operating system vendor to download and upgrade RHEL.

   For example, you can upgrade from RHEL 8.6 version to RHEL 8.8 minor version.
2. Verify the upgraded OS version by running the following command:

   ```
   cat /etc/redhat-release
   ```
3. Log in to Cloudera Manager as an Administrator.
4. Go to the Home Status tab.

5. Click the Actions menu to the right of the Embedded Container Service cluster name and select Start.
6. Click the Start option.

   The **Command Details** window shows the progress of the services.

   Wait for all the pods to start. The wait time depends on the number of nodes in the cluster.

Mixed mode minor RHEL OS upgrade on the ECS hosts

After installing CDP Private Cloud Data Services on a particular RHEL OS, you can now upgrade RHEL OS on some of your hosts to a new minor version. For example, in a 10 node cluster running in a RHEL 8.x OS series, you can upgrade any number of hosts from 8.6 to 8.8 new minor version and keep the other hosts running on original RHEL 8.x.

About this task

You must perform this task on all Embedded Container Service (ECS) hosts.

Before you begin

1. Log in to Cloudera Manager as an Administrator, then navigate to the ECS cluster.
2. Go to the Home Status tab.
3. Click the Actions menu to the right of the Embedded Container Service cluster name and select Stop.
4. Click the Stop button in the confirmation screen.

   The **Command Details** window shows the progress of the services.
5. SSH into a ECS cluster host as a root user.
6. Verify the OS version by running the following command:

   ```
   cat /etc/redhat-release
   ```

Procedure

1. Upgrade RHEL from the installed version to the desired minor version on the ECS host you want to upgrade. Use the operating system upgrade procedures provided by your RedHat operating system vendor to download and upgrade RHEL.

   For example, you can upgrade from RHEL 8.6 version to RHEL 8.8 minor version.
2. Verify the upgraded OS version by running the following command:

   ```
   cat /etc/redhat-release
   ```
3. Log in to Cloudera Manager as an Administrator.
4. Go to the Home Status tab.
5. Click the Actions menu to the right of the Embedded Container Service cluster name and select Start.
6. Click the Start button that appears in the next screen to confirm.

   The **Command Details** window shows the progress of the services.

   Wait for all the pods to start. The wait time depends on the number of nodes in the cluster.

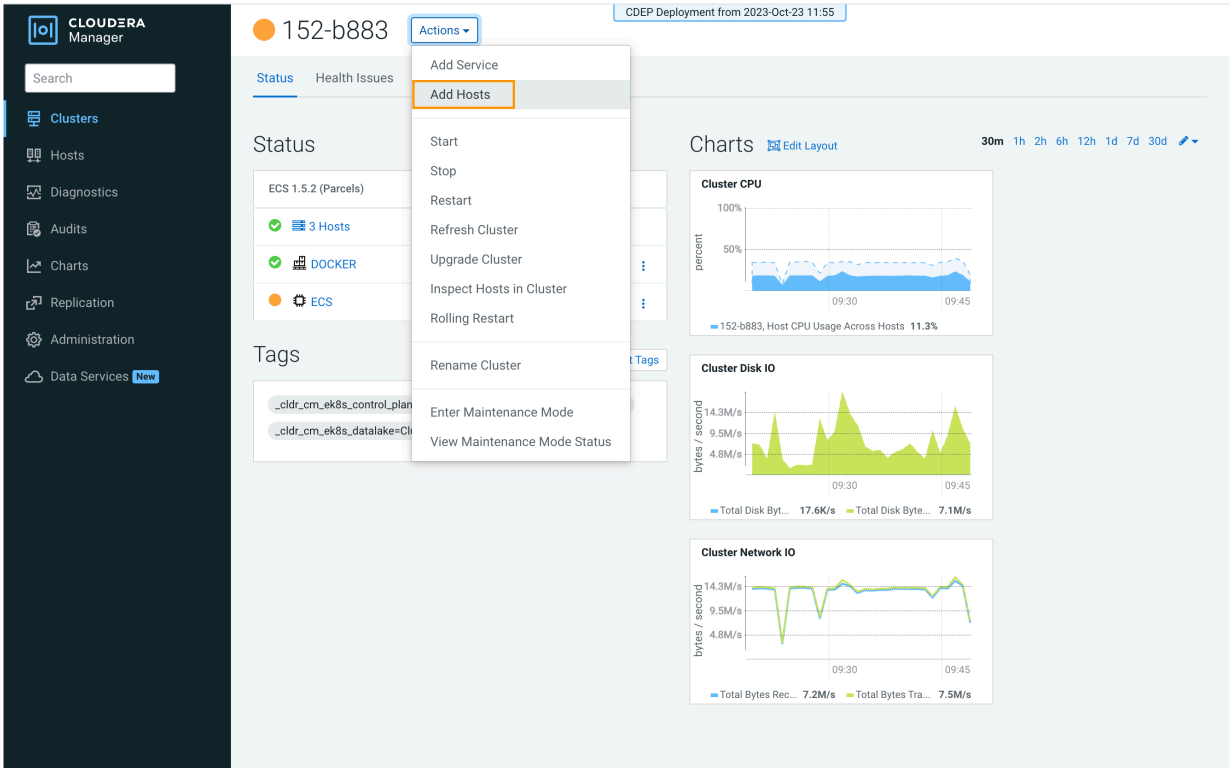
Adding hosts to a Embedded Container Service Cluster

You can add hosts to a Embedded Container Service (ECS) cluster to increase capacity and performance.

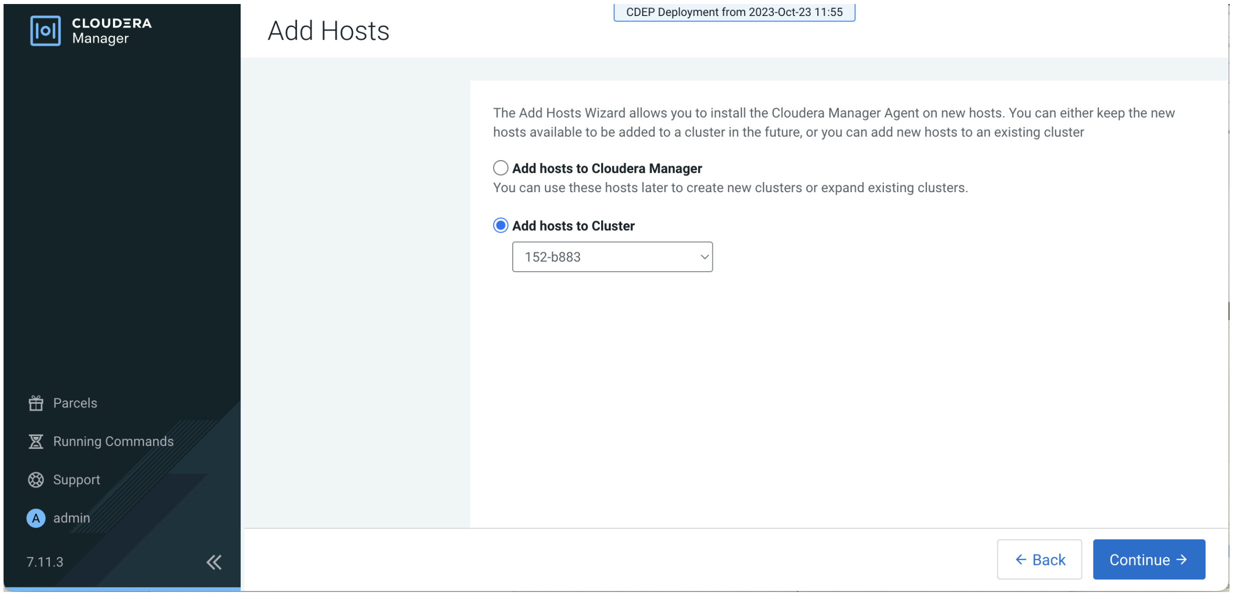
About this task

Procedure

1. On the Cloudera Manager home page, click the ECS Cluster, then select Actions > Add Hosts.



2. On the Add Hosts page, click Add Hosts to Cluster and select the ECS Cluster, then click Continue.



Add Hosts

The Add Hosts Wizard allows you to install the Cloudera Manager Agent on new hosts. You can either keep the new hosts available to be added to a cluster in the future, or you can add new hosts to an existing cluster

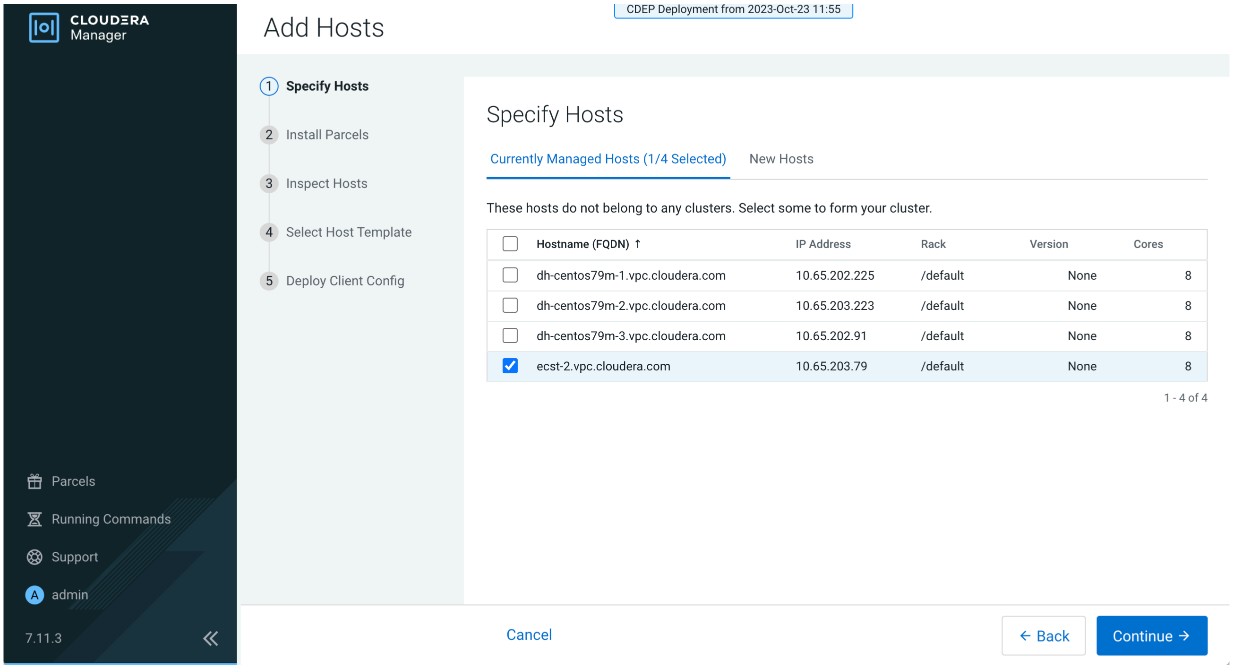
○ **Add hosts to Cloudera Manager**

You can use these hosts later to create new clusters or expand existing clusters.

● **Add hosts to Cluster**

152-b883

3. On the Specify Hosts page, hosts that have already been added to Cloudera Manager are listed on the Currently Managed Hosts tab. You can select one or more of these hosts to add to the ECS cluster.



Specify Hosts

Currently Managed Hosts (1/4 Selected) New Hosts

These hosts do not belong to any clusters. Select some to form your cluster.

□	Hostname (FQDN) ↑	IP Address	Rack	Version	Cores
□	dh-centos79m-1.vpc.cloudera.com	10.65.202.225	/default	None	8
□	dh-centos79m-2.vpc.cloudera.com	10.65.203.223	/default	None	8
□	dh-centos79m-3.vpc.cloudera.com	10.65.202.91	/default	None	8
☑	ecst-2.vpc.cloudera.com	10.65.203.79	/default	None	8

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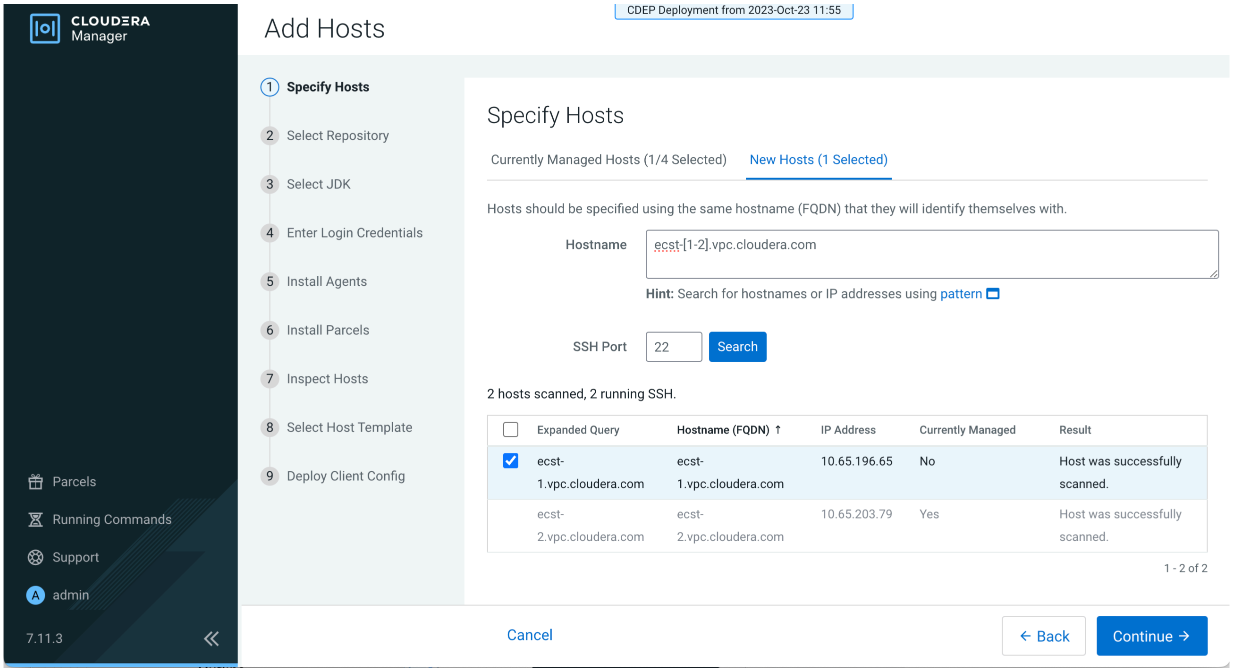
You can also click the New Hosts tab to specify one or more hosts that have not been added to Cloudera Manager. Enter a Fully Qualified Domain Name in the Hostname box, then click Search.

Note: Click the pattern link under the Hostname box to display more information about allowed FQDN patterns.



Specify Hosts

Currently Managed Hosts (1/4 Selected) New Hosts (1 Selected)

Hosts should be specified using the same hostname (FQDN) that they will identify themselves with.

Hostname: ecst-[1-2].vpc.cloudera.com

Hint: Search for hostnames or IP addresses using pattern

SSH Port: 22

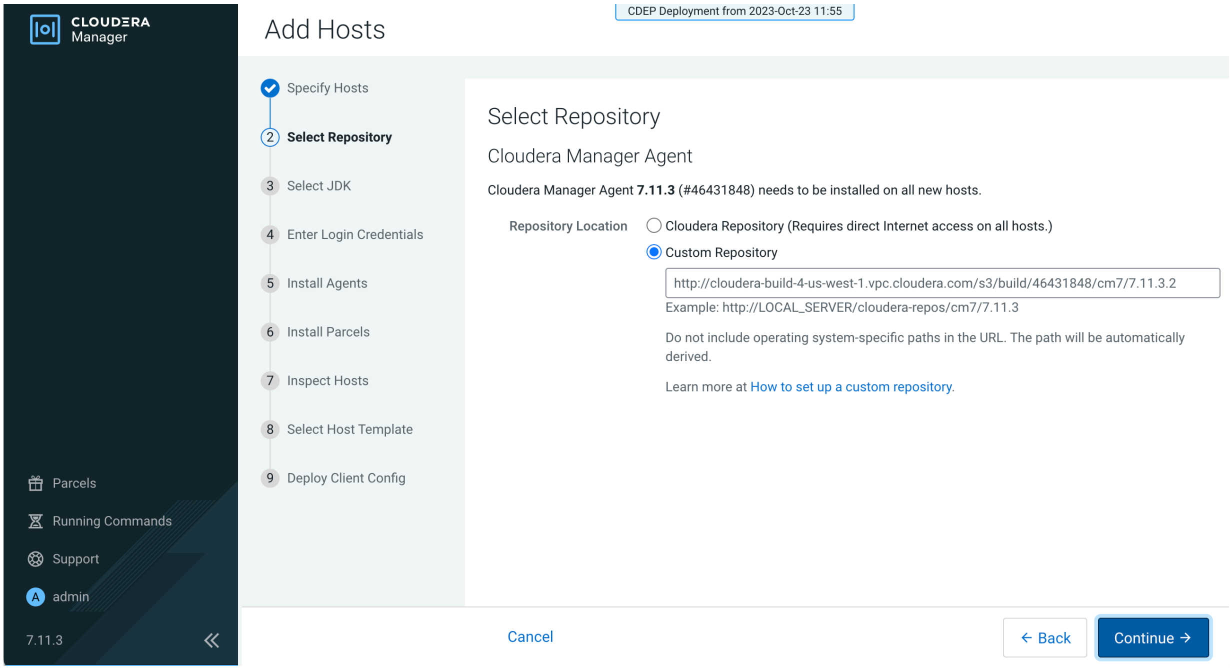
2 hosts scanned, 2 running SSH.

□	Expanded Query	Hostname (FQDN) ↑	IP Address	Currently Managed	Result
☑	ecst-1.vpc.cloudera.com	ecst-1.vpc.cloudera.com	10.65.196.65	No	Host was successfully scanned.
	ecst-2.vpc.cloudera.com	ecst-2.vpc.cloudera.com	10.65.203.79	Yes	Host was successfully scanned.

1 - 2 of 2

After you have finished specifying the ECS hosts, click Continue.

4. On the Select Repository page, the applicable Cloudera Manager Agent repository location is selected by default. Click Continue.



Select Repository

Cloudera Manager Agent

Cloudera Manager Agent **7.11.3** (#46431848) needs to be installed on all new hosts.

Repository Location ○ Cloudera Repository (Requires direct Internet access on all hosts.)

● Custom Repository

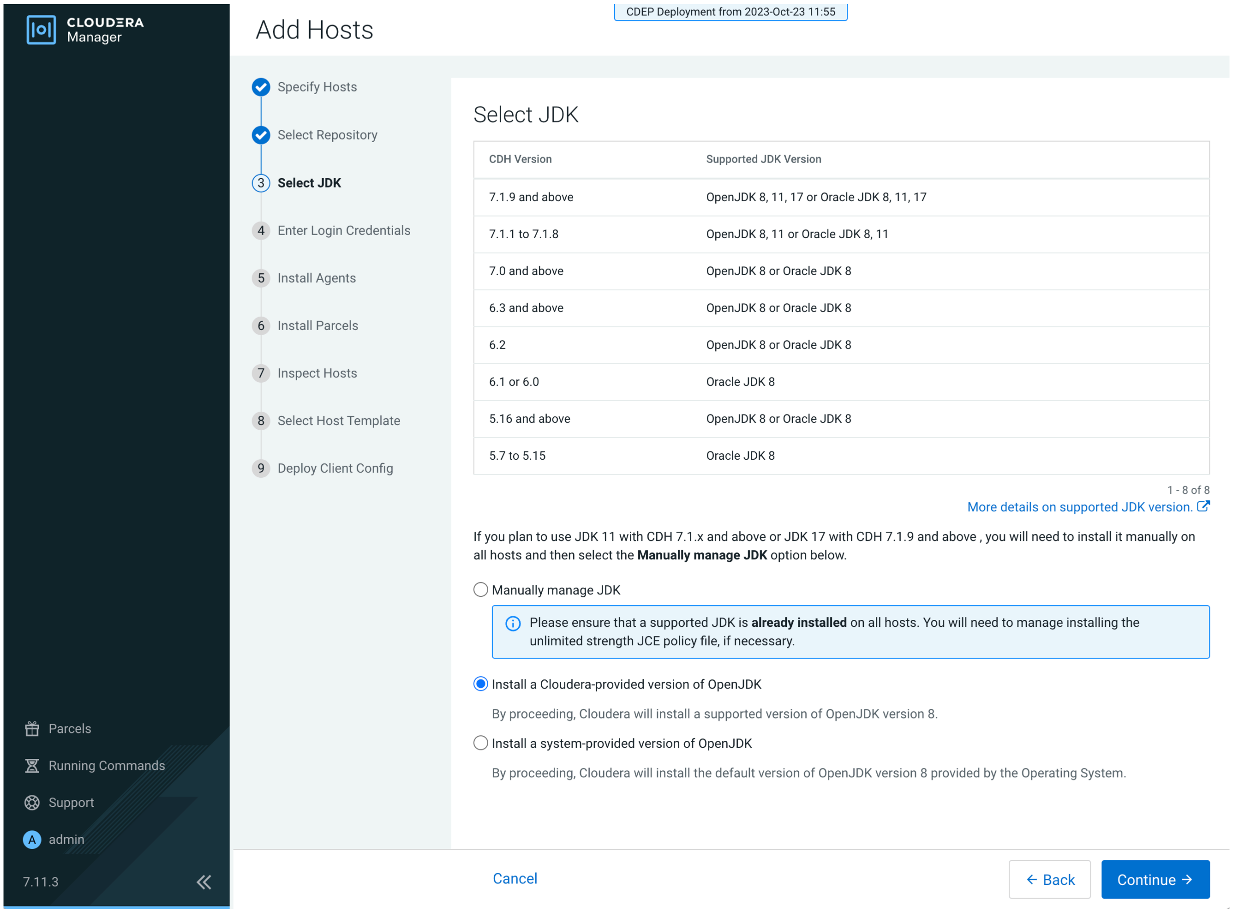
http://cloudera-build-4-us-west-1.vpc.cloudera.com/s3/build/46431848/cm7/7.11.3.2

Example: http://LOCAL_SERVER/cloudera-repos/cm7/7.11.3

Do not include operating system-specific paths in the URL. The path will be automatically derived.

Learn more at How to set up a custom repository.

5. Select a JDK option on the Select JDK page, then click Continue.



Select JDK

CDH Version	Supported JDK Version
7.1.9 and above	OpenJDK 8, 11, 17 or Oracle JDK 8, 11, 17
7.1.1 to 7.1.8	OpenJDK 8, 11 or Oracle JDK 8, 11
7.0 and above	OpenJDK 8 or Oracle JDK 8
6.3 and above	OpenJDK 8 or Oracle JDK 8
6.2	OpenJDK 8 or Oracle JDK 8
6.1 or 6.0	Oracle JDK 8
5.16 and above	OpenJDK 8 or Oracle JDK 8
5.7 to 5.15	Oracle JDK 8

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More details on supported JDK version.

If you plan to use JDK 11 with CDH 7.1.x and above or JDK 17 with CDH 7.1.9 and above , you will need to install it manually on all hosts and then select the **Manually manage JDK** option below.

○ Manually manage JDK

Please ensure that a supported JDK is **already installed** on all hosts. You will need to manage installing the unlimited strength JCE policy file, if necessary.

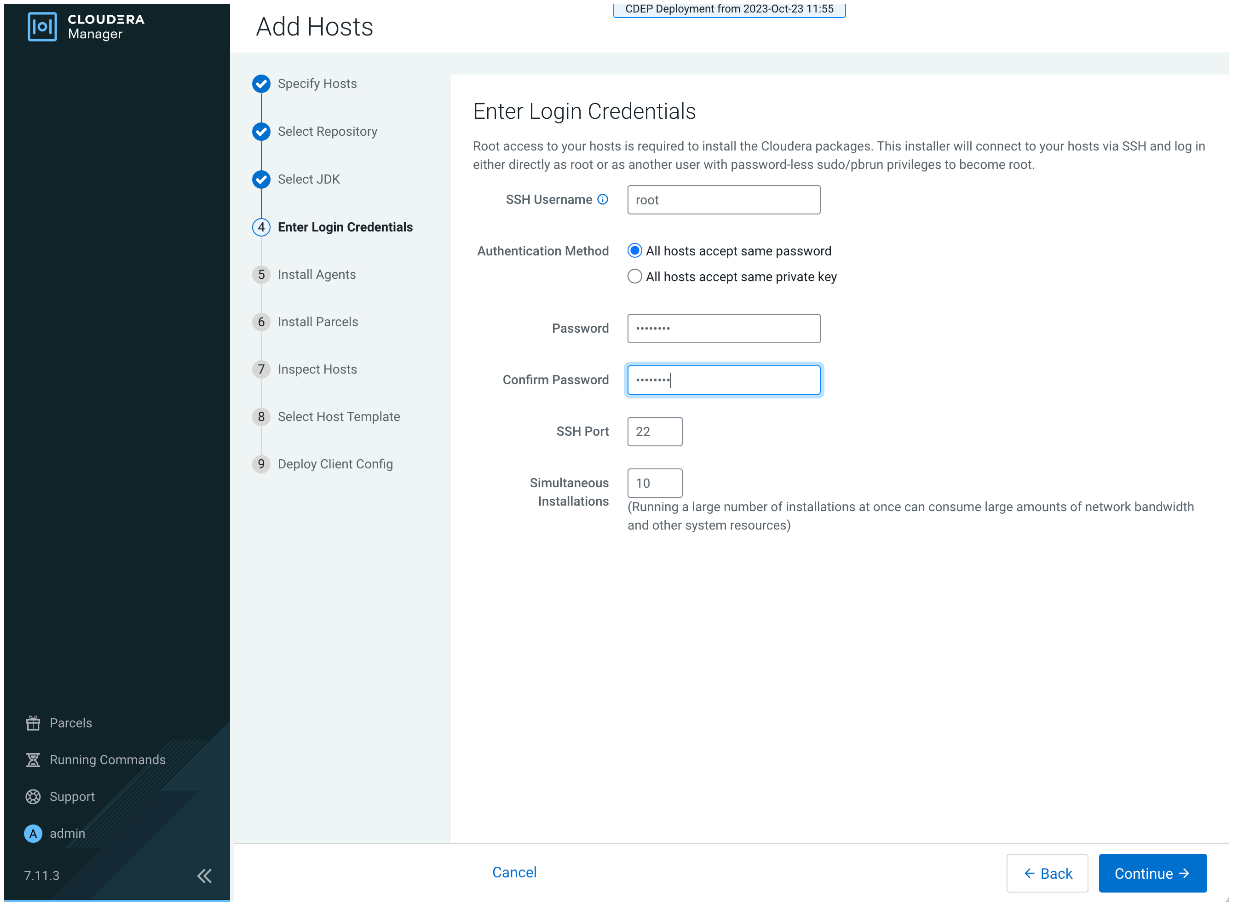
● Install a Cloudera-provided version of OpenJDK

By proceeding, Cloudera will install a supported version of OpenJDK version 8.

○ Install a system-provided version of OpenJDK

By proceeding, Cloudera will install the default version of OpenJDK version 8 provided by the Operating System.

6. On the Enter Login Credentials page, All hosts accept the same password is selected by default. Enter the user name in the SSH Username box, and type in and confirm the password. You can also select the All hosts accept the same private key option and provide the Private Key and passphrase.



Add Hosts

CDEP Deployment from 2023-Oct-23 11:55

Enter Login Credentials

Root access to your hosts is required to install the Cloudera packages. This installer will connect to your hosts via SSH and log in either directly as root or as another user with password-less sudo/pbrun privileges to become root.

SSH Username: root

Authentication Method:
● All hosts accept same password
○ All hosts accept same private key

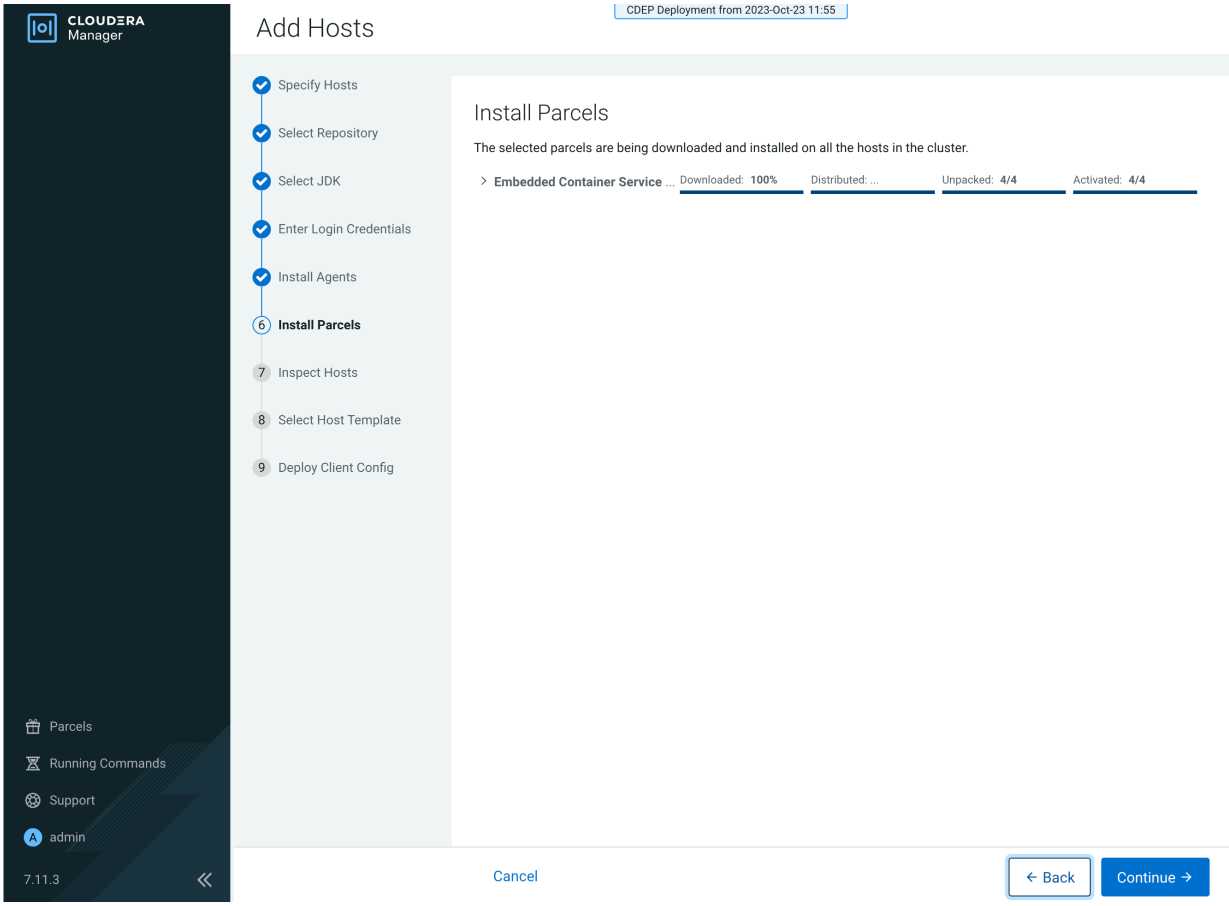
Password: ••••••••

Confirm Password: ••••••••

SSH Port: 22

Simultaneous Installations: 10
(Running a large number of installations at once can consume large amounts of network bandwidth and other system resources)

7. The Cloudera Manager agents are installed, and then the Install Parcels page appears. The selected parcel is downloaded to the Cloudera Manager server host, distributed, unpacked, and activated on the ECS cluster hosts. Click Continue.

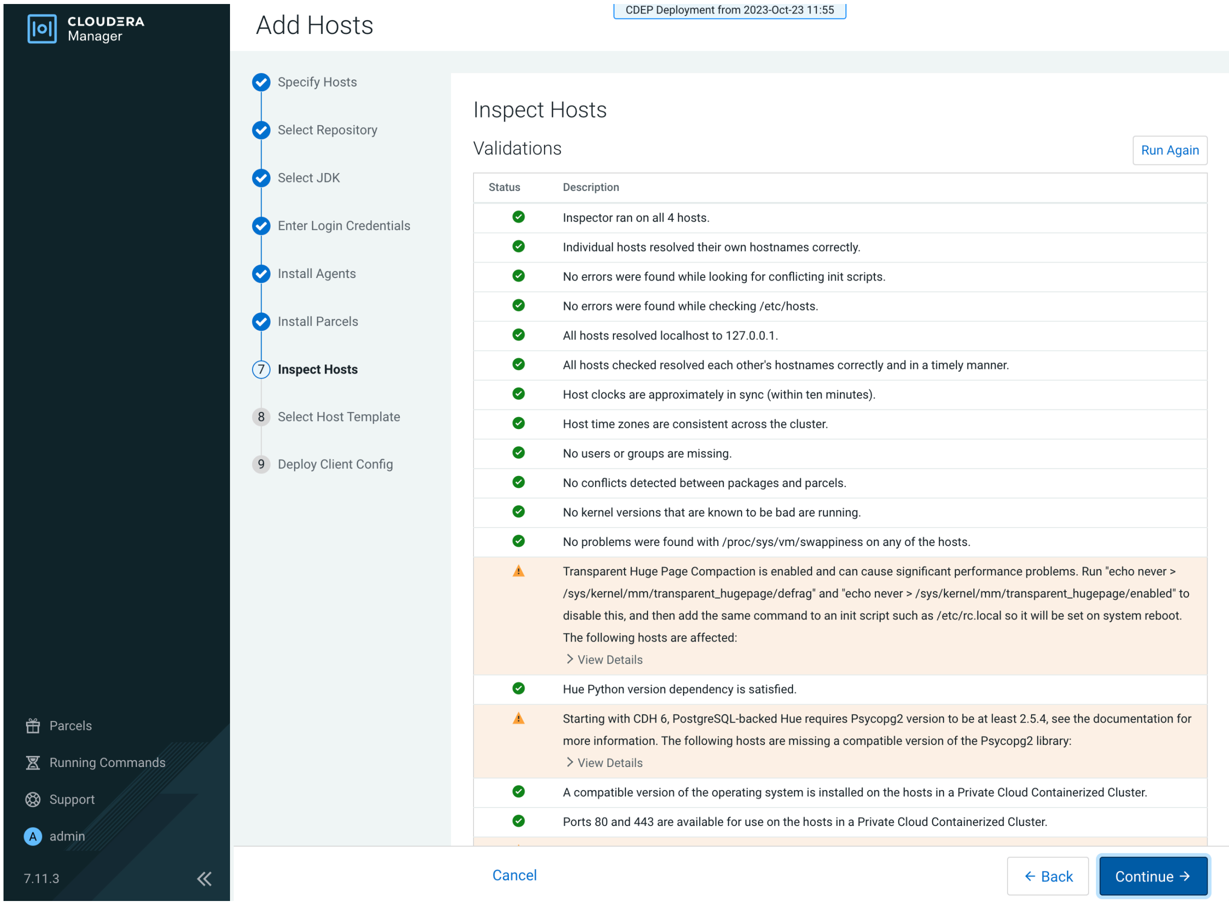


Install Parcels

The selected parcels are being downloaded and installed on all the hosts in the cluster.

Embedded Container Service ...	Downloaded: 100%	Distributed: ...	Unpacked: 4/4	Activated: 4/4

8. Review the Validations list on the Inspect Hosts page. If issues are detected, you can fix the issues, then click Run Again to repeat the host inspection. Click Continue.



Inspect Hosts

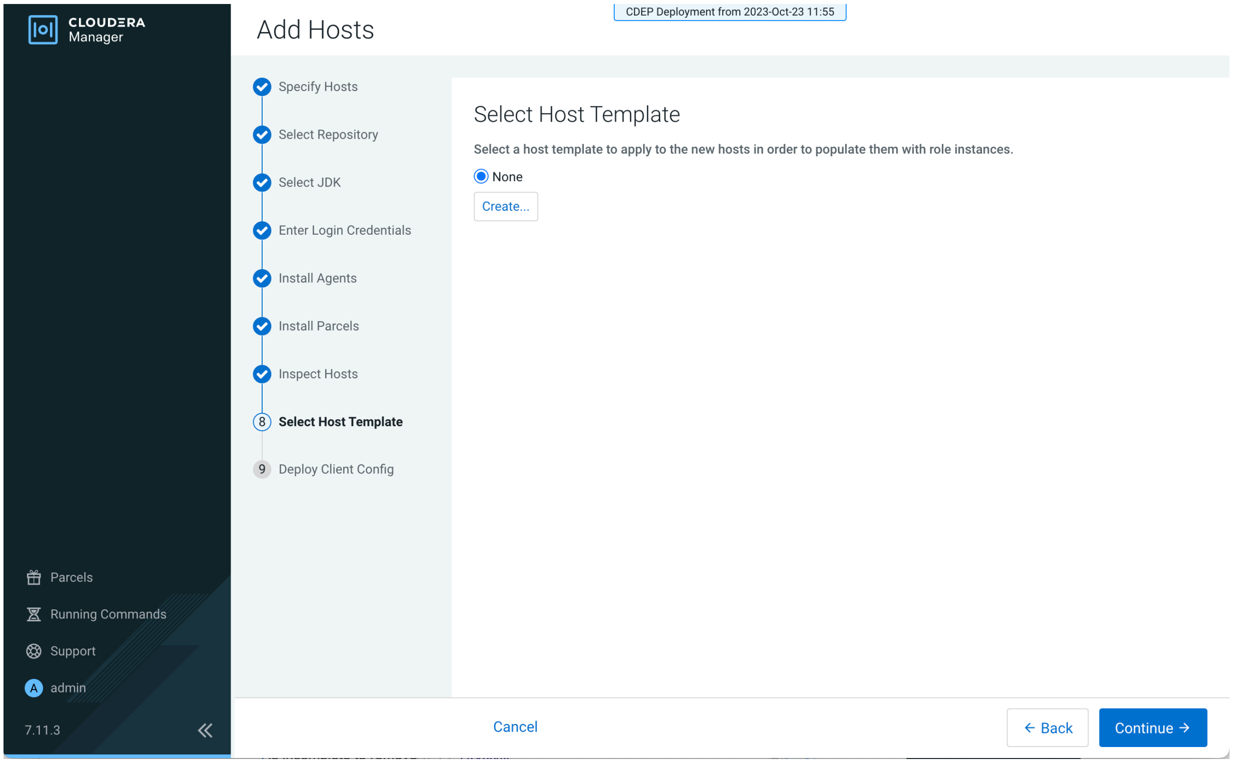
Validations

Status	Description
✓	Inspector ran on all 4 hosts.
✓	Individual hosts resolved their own hostnames correctly.
✓	No errors were found while looking for conflicting init scripts.
✓	No errors were found while checking /etc/hosts.
✓	All hosts resolved localhost to 127.0.0.1.
✓	All hosts checked resolved each other's hostnames correctly and in a timely manner.
✓	Host clocks are approximately in sync (within ten minutes).
✓	Host time zones are consistent across the cluster.
✓	No users or groups are missing.
✓	No conflicts detected between packages and parcels.
✓	No kernel versions that are known to be bad are running.
✓	No problems were found with /proc/sys/vm/swappiness on any of the hosts.
⚠	Transparent Huge Page Compaction is enabled and can cause significant performance problems. Run "echo never > /sys/kernel/mm/transparent_hugepage/defrag" and "echo never > /sys/kernel/mm/transparent_hugepage/enabled" to disable this, and then add the same command to an init script such as /etc/rc.local so it will be set on system reboot. The following hosts are affected: > View Details
✓	Hue Python version dependency is satisfied.
⚠	Starting with CDH 6, PostgreSQL-backed Hue requires Psycopg2 version to be at least 2.5.4, see the documentation for more information. The following hosts are missing a compatible version of the Psycopg2 library: > View Details
✓	A compatible version of the operating system is installed on the hosts in a Private Cloud Containerized Cluster.
✓	Ports 80 and 443 are available for use on the hosts in a Private Cloud Containerized Cluster.

9. The Select Host Template page lists available host templates. Click Create.

Note:

The following three steps describe how to create a host template to assign the Docker Server and Ecs Agent role groups to the new host. You can also select None and add these role instances after adding the new host to the cluster, as described at the end of this topic.



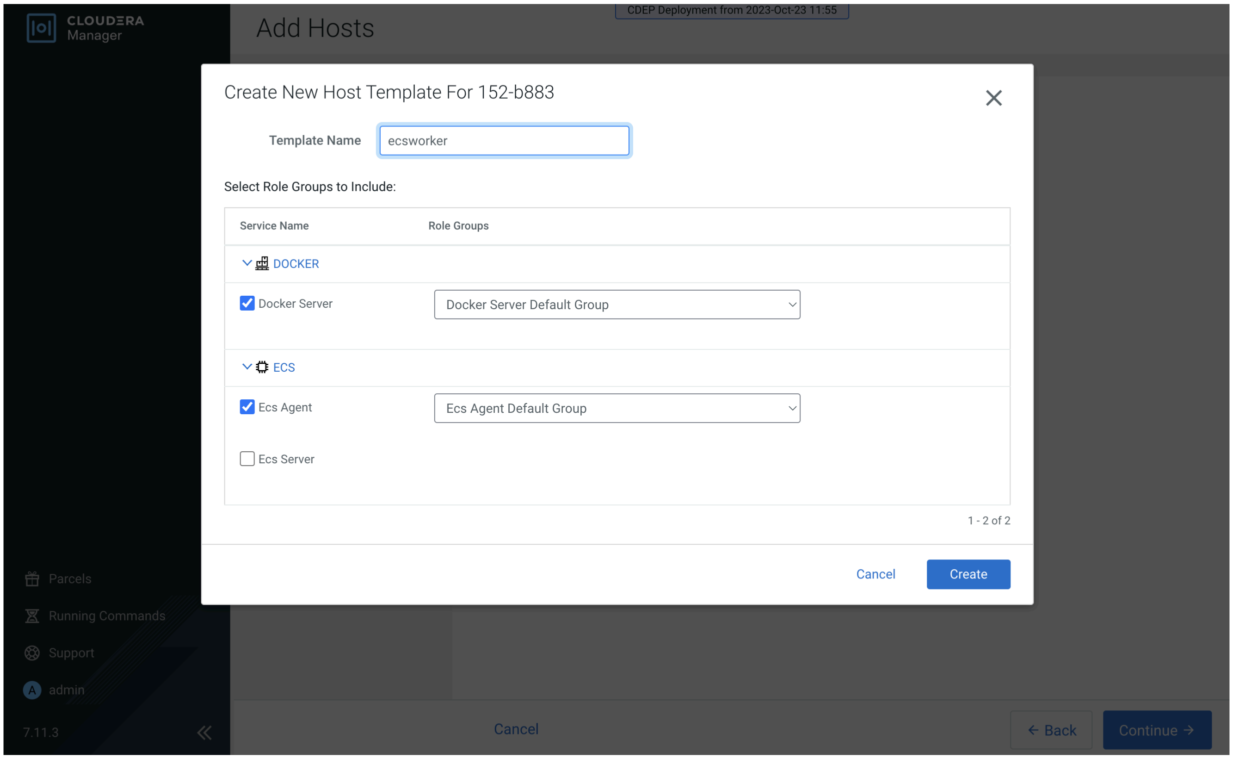
Select Host Template

Select a host template to apply to the new hosts in order to populate them with role instances.

● None

Create...

10. On the Create New Host Template pop-up, enter a template name and select the Docker Server and Ecs Agent role groups, then click Create.



Create New Host Template For 152-b883

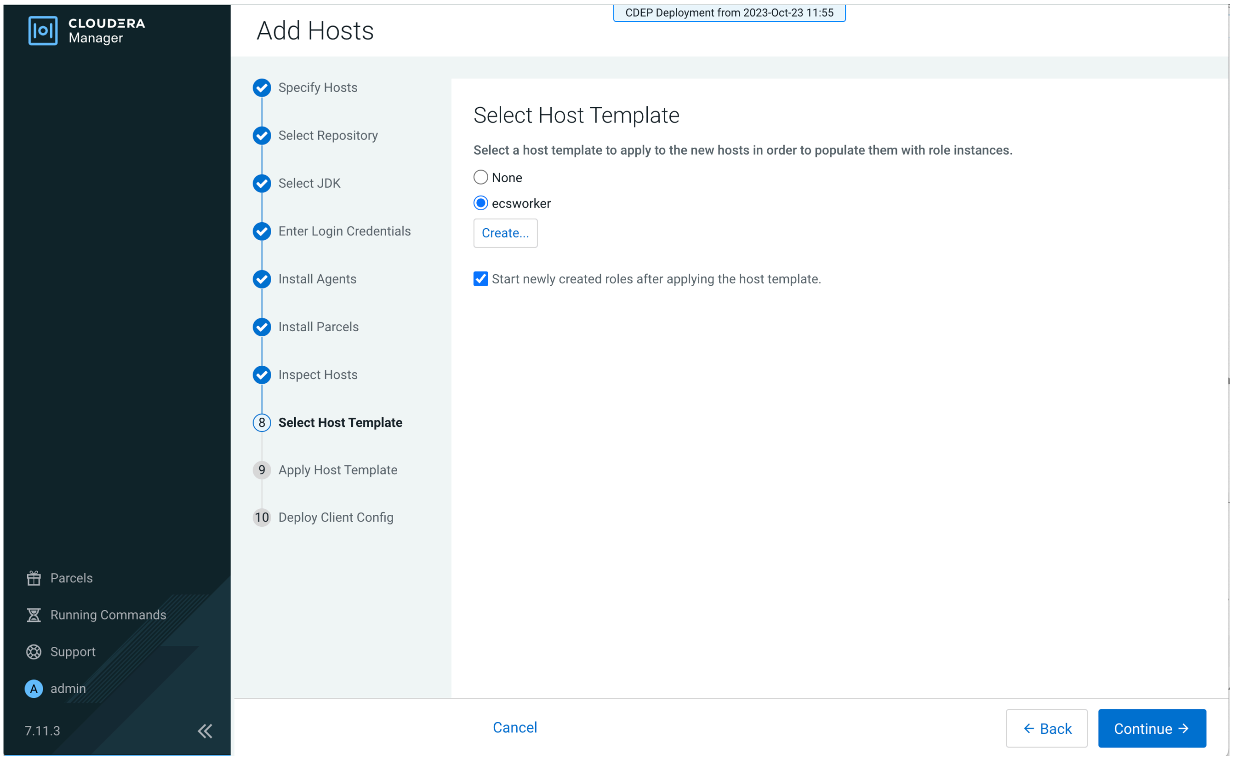
Template Name: ecsworker

Select Role Groups to Include:

Service Name	Role Groups
DOCKER	
☑ Docker Server	Docker Server Default Group
ECS	
☑ Ecs Agent	Ecs Agent Default Group
□ Ecs Server	

1 - 2 of 2

11. On the Select Host Template page, select the new template, then click Continue.



Select Host Template

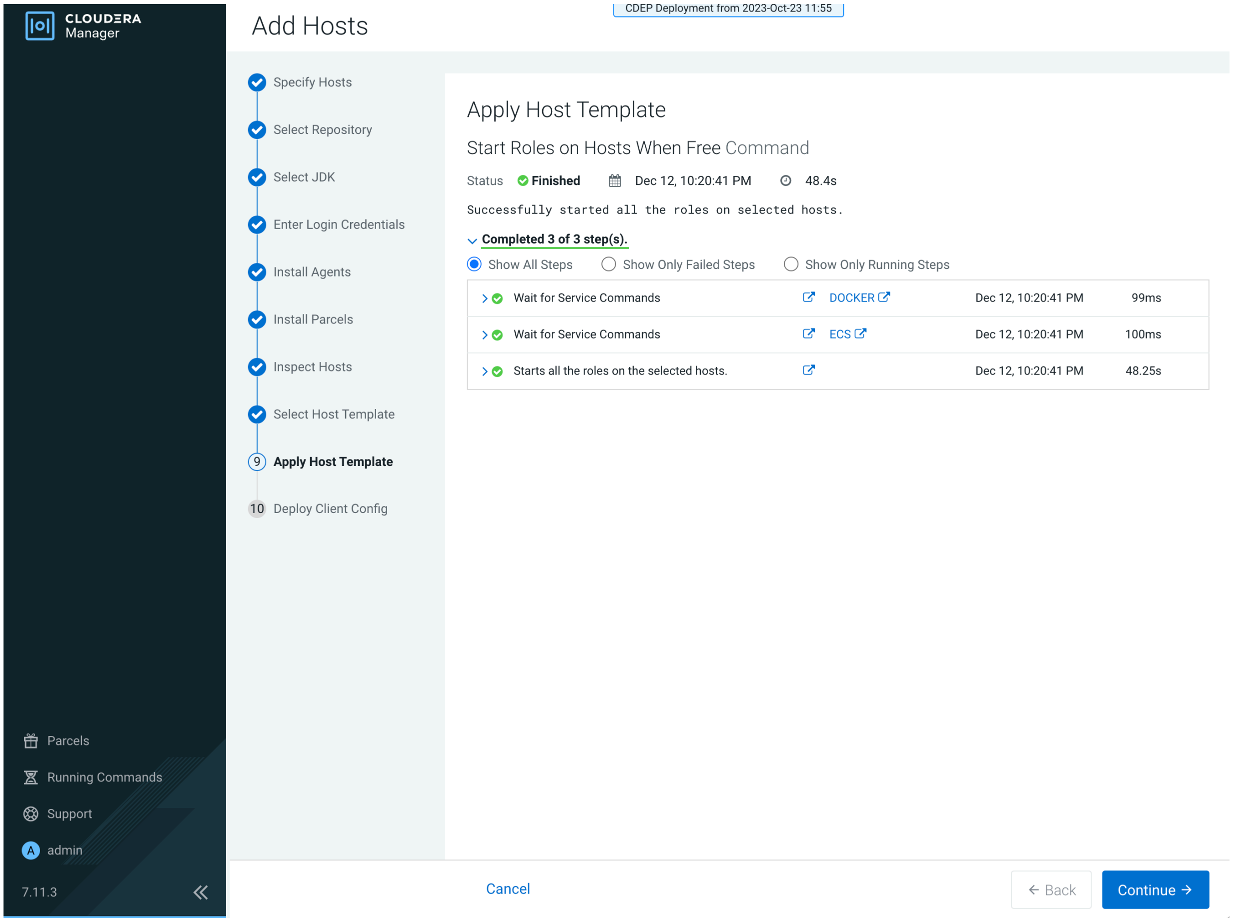
Select a host template to apply to the new hosts in order to populate them with role instances.

○ None

● ecsworker

☑ Start newly created roles after applying the host template.

12. The Apply Host Template page appears. After the roles have successfully started, click Continue.



Apply Host Template

Start Roles on Hosts When Free Command

Status ✓ Finished Dec 12, 10:20:41 PM 48.4s

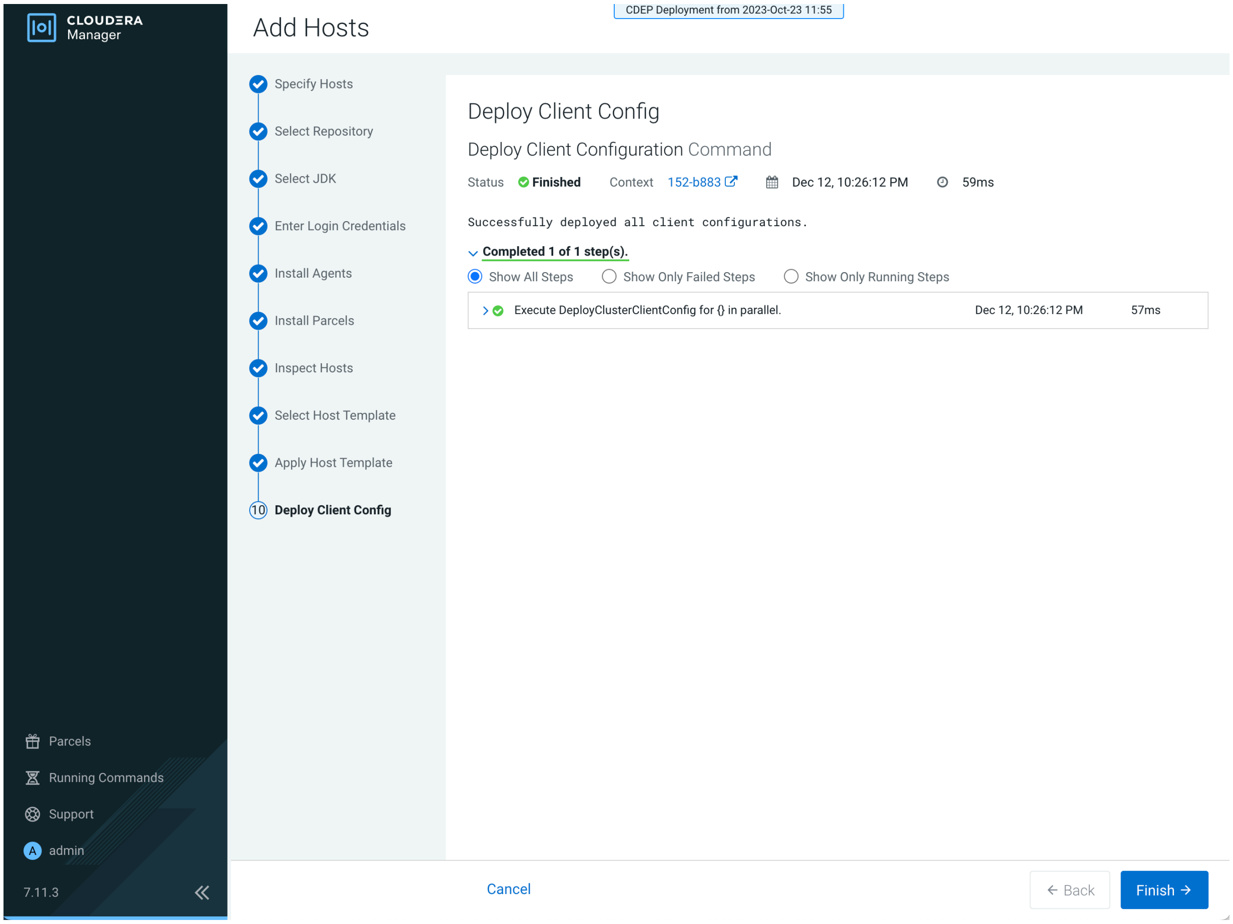
```
Successfully started all the roles on selected hosts.
```

Completed 3 of 3 step(s).

● Show All Steps ○ Show Only Failed Steps ○ Show Only Running Steps

✓ Wait for Service Commands	DOCKER	Dec 12, 10:20:41 PM	99ms
✓ Wait for Service Commands	ECS	Dec 12, 10:20:41 PM	100ms
✓ Starts all the roles on the selected hosts.		Dec 12, 10:20:41 PM	48.25s

13. The Deploy Client Config page appears. After all client configurations have been successfully deployed, click Finish.



CDEP Deployment from 2023-Oct-23 11:55

CLOUDERA Manager

Add Hosts

- Specify Hosts
- Select Repository
- Select JDK
- Enter Login Credentials
- Install Agents
- Install Parcels
- Inspect Hosts
- Select Host Template
- Apply Host Template
- 10 **Deploy Client Config**

Deploy Client Config

Deploy Client Configuration Command

Status **Finished** Context 152-b883 Dec 12, 10:26:12 PM 59ms

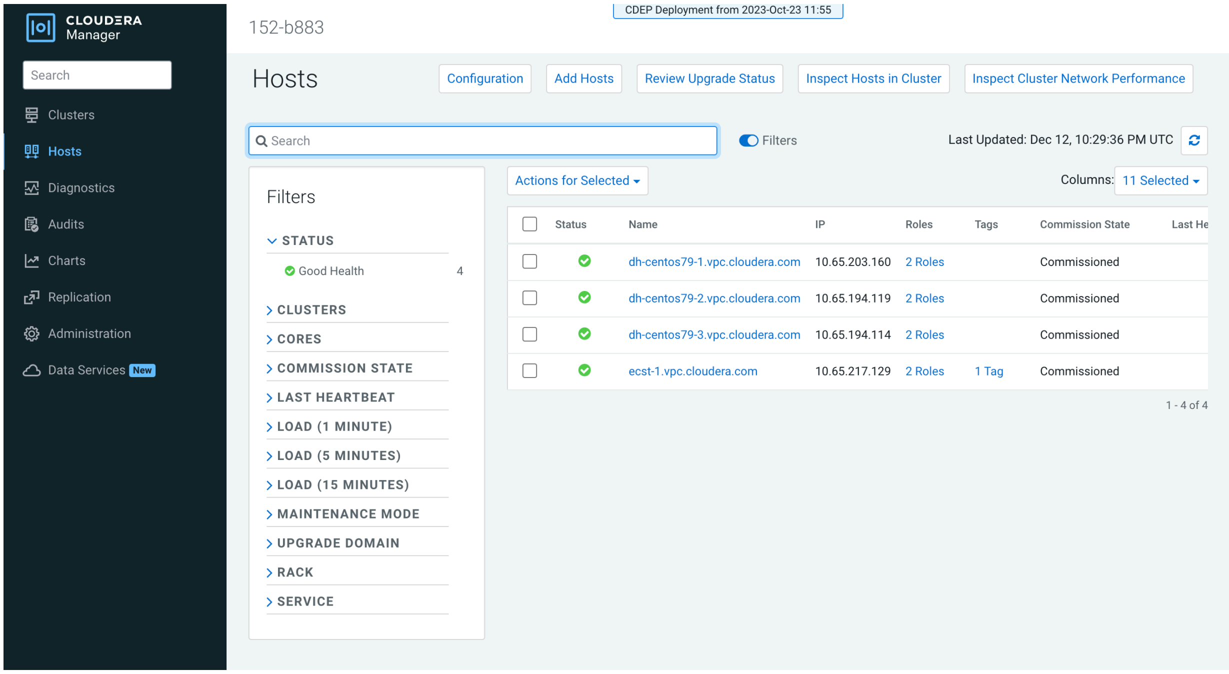
```
Successfully deployed all client configurations.
```

Completed 1 of 1 step(s).

● Show All Steps ○ Show Only Failed Steps ○ Show Only Running Steps

Execute DeployClusterClientConfig for {} in parallel.	Dec 12, 10:26:12 PM	57ms

14. The new host is listed on the ECS cluster Hosts page.



CDEP Deployment from 2023-Oct-23 11:55

CLOUDERA Manager

152-b883

Hosts

Last Updated: Dec 12, 10:29:36 PM UTC

Columns: 11 Selected

Filters

- STATUS
  - Good Health 4
- CLUSTERS
- CORES
- COMMISSION STATE
- LAST HEARTBEAT
- LOAD (1 MINUTE)
- LOAD (5 MINUTES)
- LOAD (15 MINUTES)
- MAINTENANCE MODE
- UPGRADE DOMAIN
- RACK
- SERVICE

□	Status	Name	IP	Roles	Tags	Commission State	Last He
□	✓	dh-centos79-1.vpc.cloudera.com	10.65.203.160	2 Roles		Commissioned	
□	✓	dh-centos79-2.vpc.cloudera.com	10.65.194.119	2 Roles		Commissioned	
□	✓	dh-centos79-3.vpc.cloudera.com	10.65.194.114	2 Roles		Commissioned	
□	✓	ecst-1.vpc.cloudera.com	10.65.217.129	2 Roles	1 Tag	Commissioned	

1 - 4 of 4

15. If your ECS hosts are running the CentOS 8.4, OEL 8.4, RHEL 7.9, or RHEL 8 operating systems, you must install iptables on all the ECS hosts.

For CentOS 8.4, OEL 8.4, or RHEL 8, run the following command on each ECS host:

```
yum --setopt=tsflags=noscripts install -y iptables
```

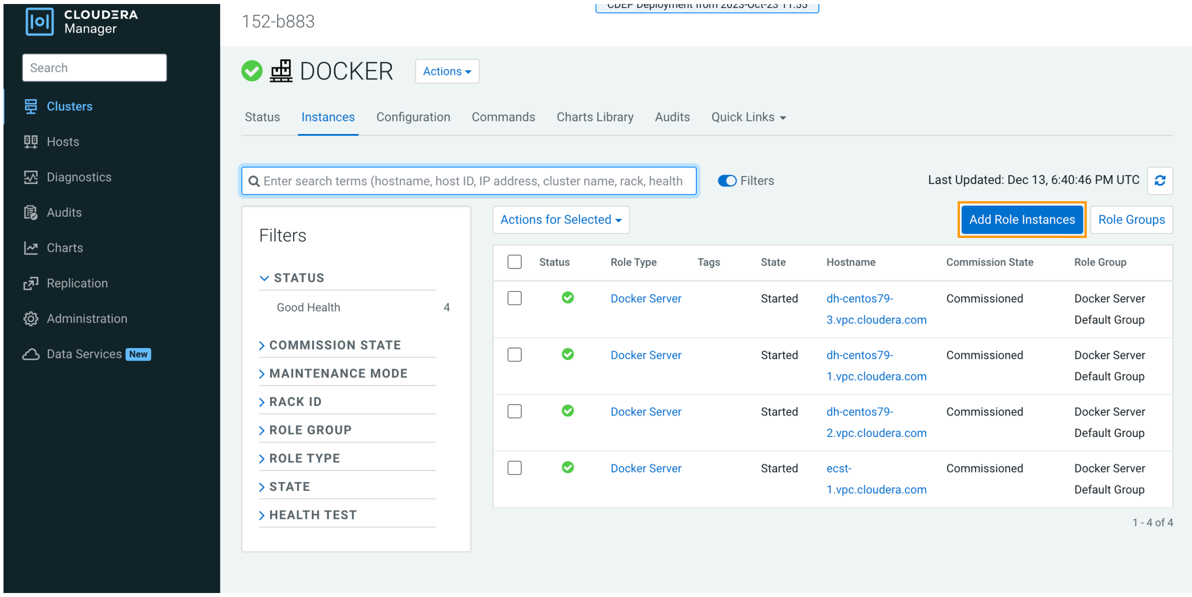
For RHEL 7.9, run the following command on each ECS host:

```
yum install -y iptables
```

16. If you did not apply a host template to assign roles, perform the following steps to assign the Docker Server and Ecs Agent role groups to the new host.

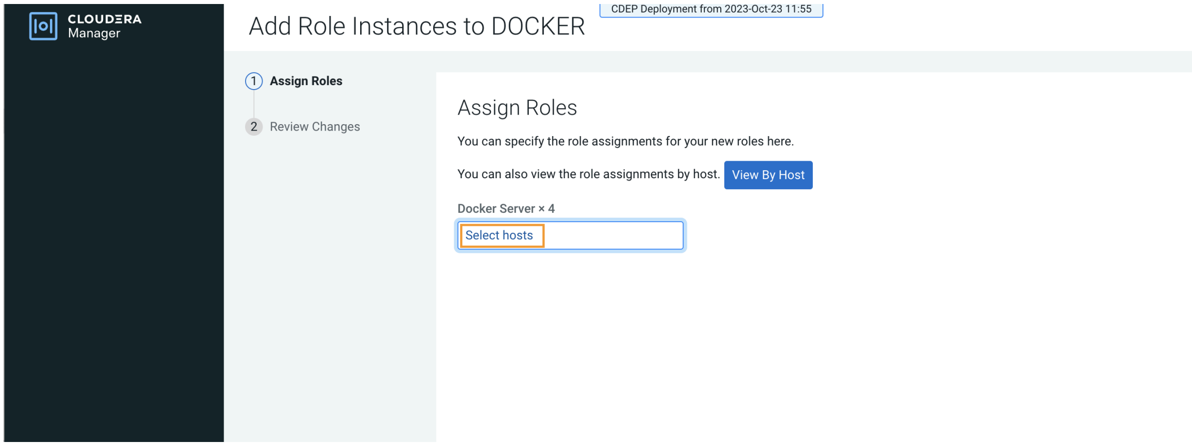
To assign the Docker Server role group:

a. Click DOCKER on the ECS cluster home page, select Instances, then click Add Role Instances.



□	Status	Role Type	Tags	State	Hostname	Commission State	Role Group
□	✓	Docker Server		Started	dh-centos79-3.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	✓	Docker Server		Started	dh-centos79-1.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	✓	Docker Server		Started	dh-centos79-2.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	✓	Docker Server		Started	ecst-1.vpc.cloudera.com	Commissioned	Docker Server Default Group

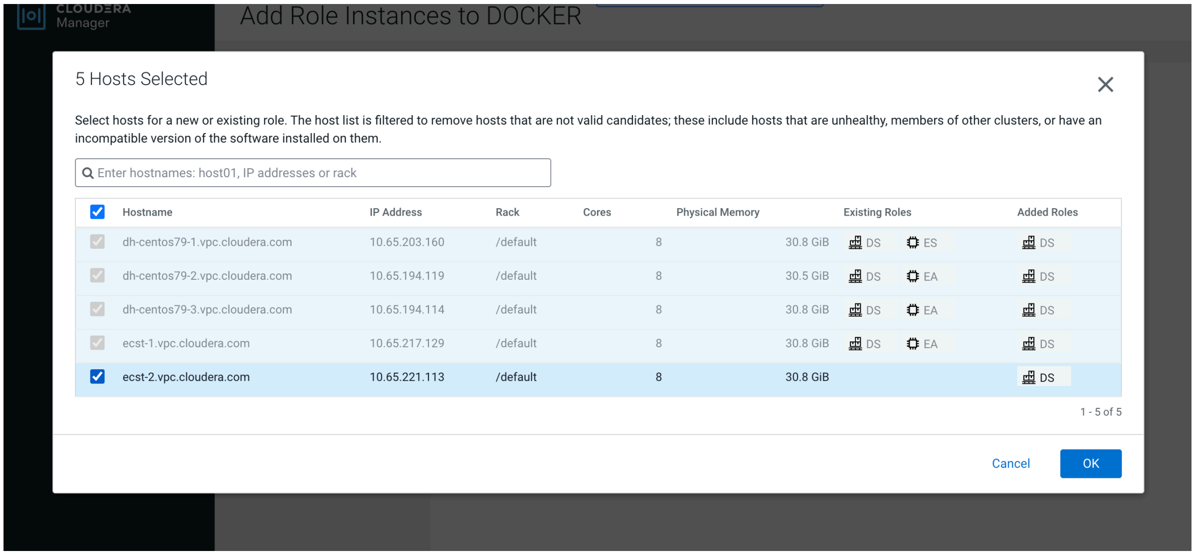
b. On the Add Role Instances to DOCKER page, click Select hosts.



You can specify the role assignments for your new roles here.

You can also view the role assignments by host.

c. On the Hosts Selected pop-up, select the new host, then click OK.



CLOUDERA Manager
Add Role Instances to DOCKER

5 Hosts Selected

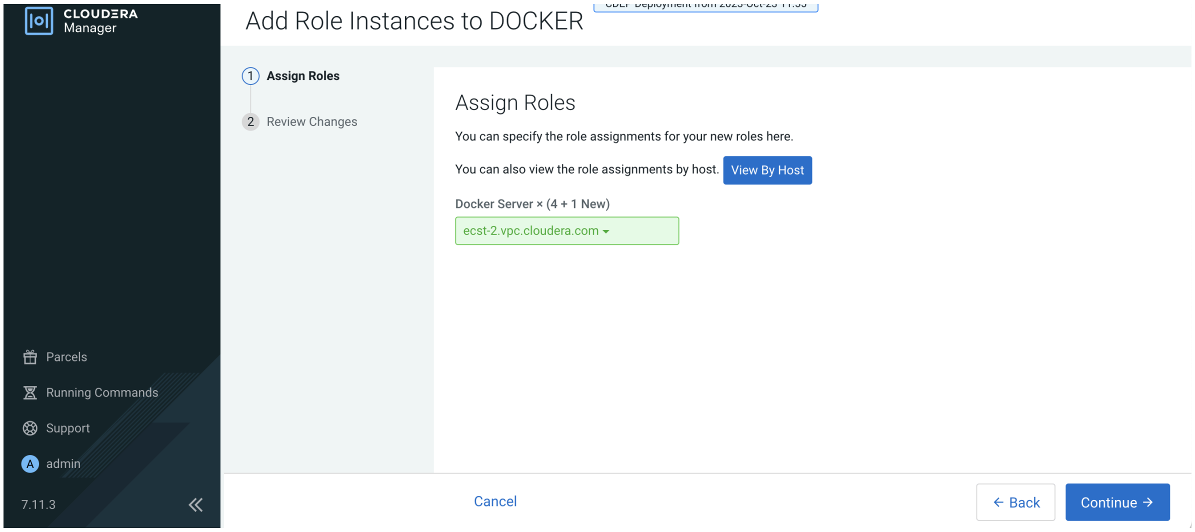
Select hosts for a new or existing role. The host list is filtered to remove hosts that are not valid candidates; these include hosts that are unhealthy, members of other clusters, or have an incompatible version of the software installed on them.

Enter hostnames: host01, IP addresses or rack

☑	Hostname	IP Address	Rack	Cores	Physical Memory	Existing Roles	Added Roles
☑	dh-centos79-1.vpc.cloudera.com	10.65.203.160	/default	8	30.8 GiB	DS ES	DS
☑	dh-centos79-2.vpc.cloudera.com	10.65.194.119	/default	8	30.5 GiB	DS EA	DS
☑	dh-centos79-3.vpc.cloudera.com	10.65.194.114	/default	8	30.8 GiB	DS EA	DS
☑	ecst-1.vpc.cloudera.com	10.65.217.129	/default	8	30.8 GiB	DS EA	DS
☑	ecst-2.vpc.cloudera.com	10.65.221.113	/default	8	30.8 GiB		DS

1 - 5 of 5

d. On the Assign Roles page, click Continue.



Assign Roles

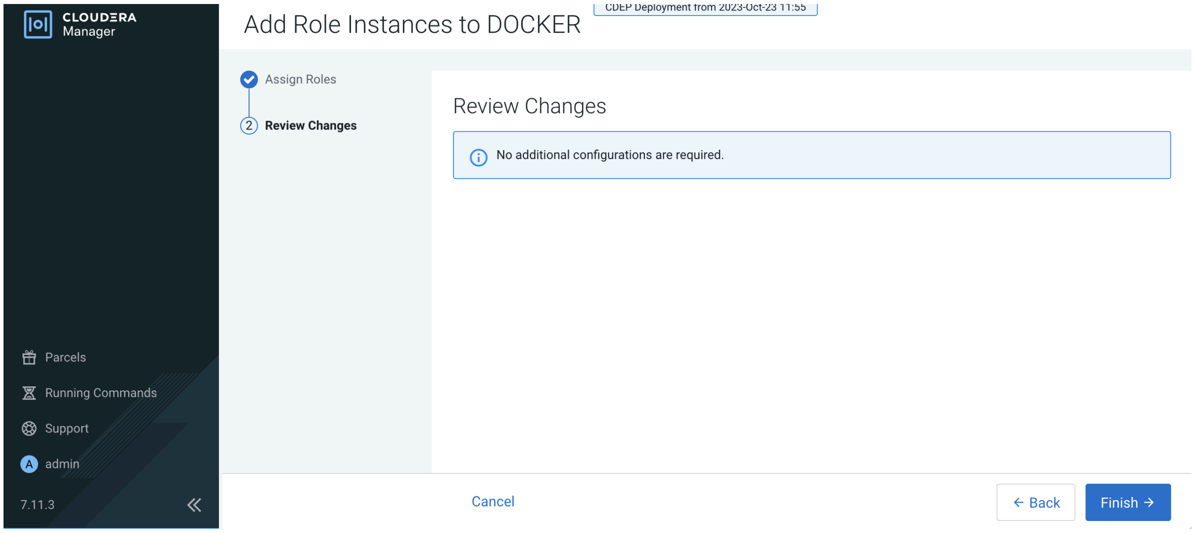
You can specify the role assignments for your new roles here.

You can also view the role assignments by host. View By Host

Docker Server × (4 + 1 New)

ecst-2.vpc.cloudera.com

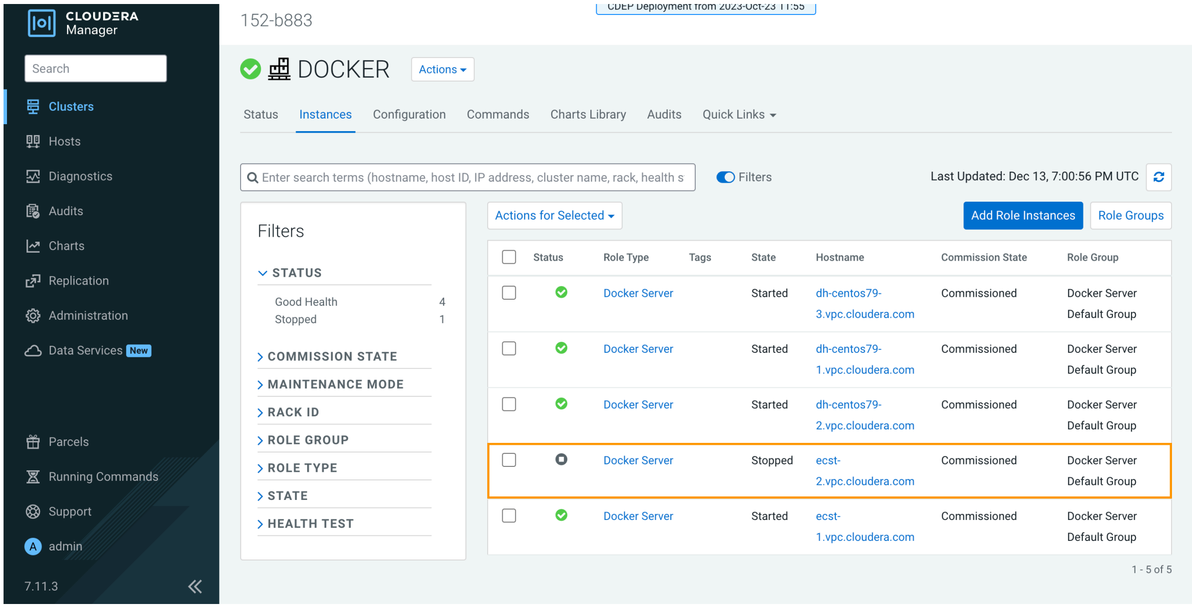
e. On the Review Changes page, click Finish.



Review Changes

No additional configurations are required.

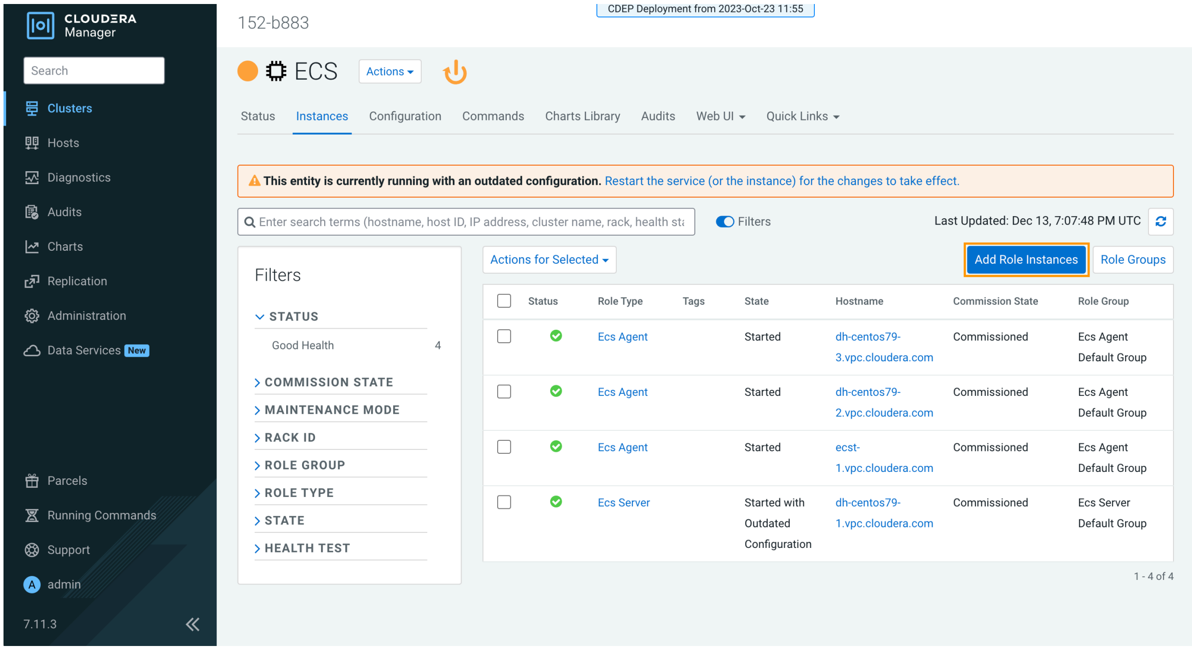
f. The new host is listed on the Docker Instances page.



□	Status	Role Type	Tags	State	Hostname	Commission State	Role Group
□	✓	Docker Server		Started	dh-centos79-3.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	✓	Docker Server		Started	dh-centos79-1.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	✓	Docker Server		Started	dh-centos79-2.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	○	Docker Server		Stopped	ecst-2.vpc.cloudera.com	Commissioned	Docker Server Default Group
□	✓	Docker Server		Started	ecst-1.vpc.cloudera.com	Commissioned	Docker Server Default Group

To assign the ECS Agent role group:

a. Click ECS on the ECS cluster home page, select Instances, then click Add Role Instances.

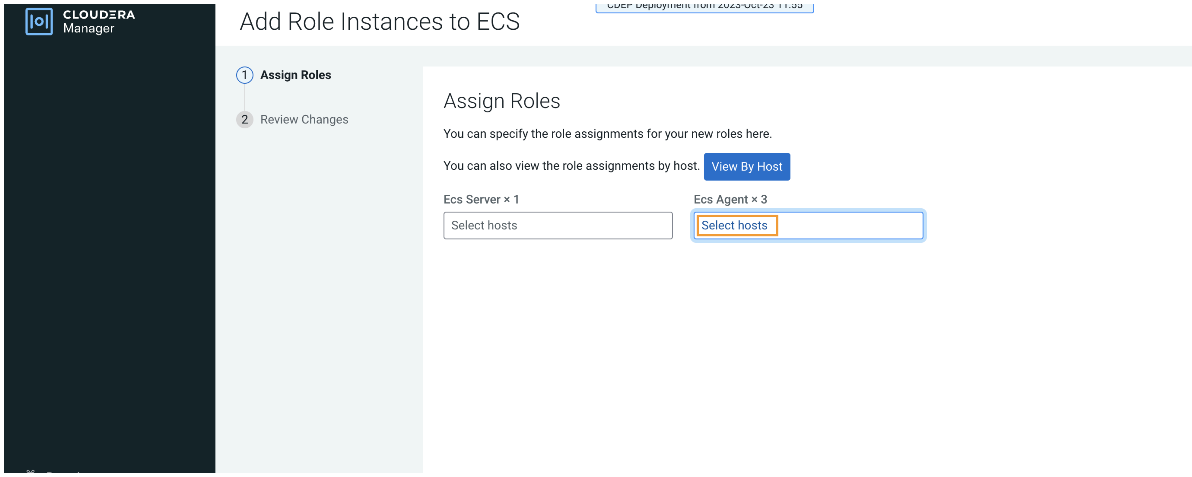


⚠ **This entity is currently running with an outdated configuration.** Restart the service (or the instance) for the changes to take effect.

□	Status	Role Type	Tags	State	Hostname	Commission State	Role Group
□	✓	Ecs Agent		Started	dh-centos79-3.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	✓	Ecs Agent		Started	dh-centos79-2.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	✓	Ecs Agent		Started	ecst-1.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	✓	Ecs Server		Started with Outdated Configuration	dh-centos79-1.vpc.cloudera.com	Commissioned	Ecs Server Default Group

b. On the Add Role Instances to ECS page, in the Ecs Agent box, click Select hosts.

⚠ **Important:** Be sure to click Select hosts in the Ecs Agent box – do not click the link in the Ecs Server box.



Add Role Instances to ECS

Assign Roles

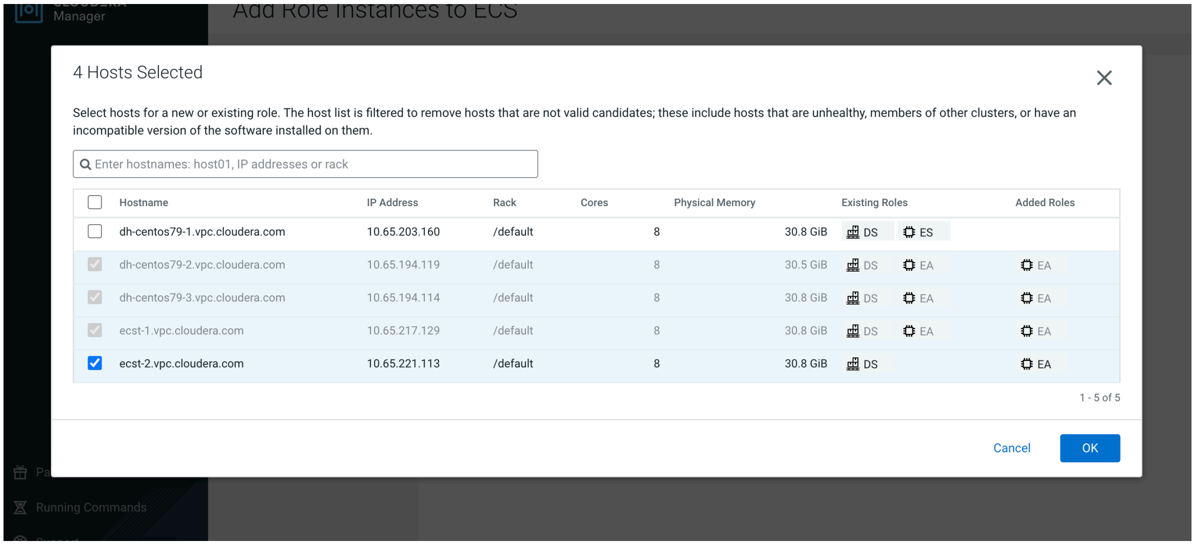
You can specify the role assignments for your new roles here.

You can also view the role assignments by host.

Ecs Server × 1: Select hosts

Ecs Agent × 3: Select hosts

c. On the Hosts Selected pop-up, select the new host, then click OK.



4 Hosts Selected

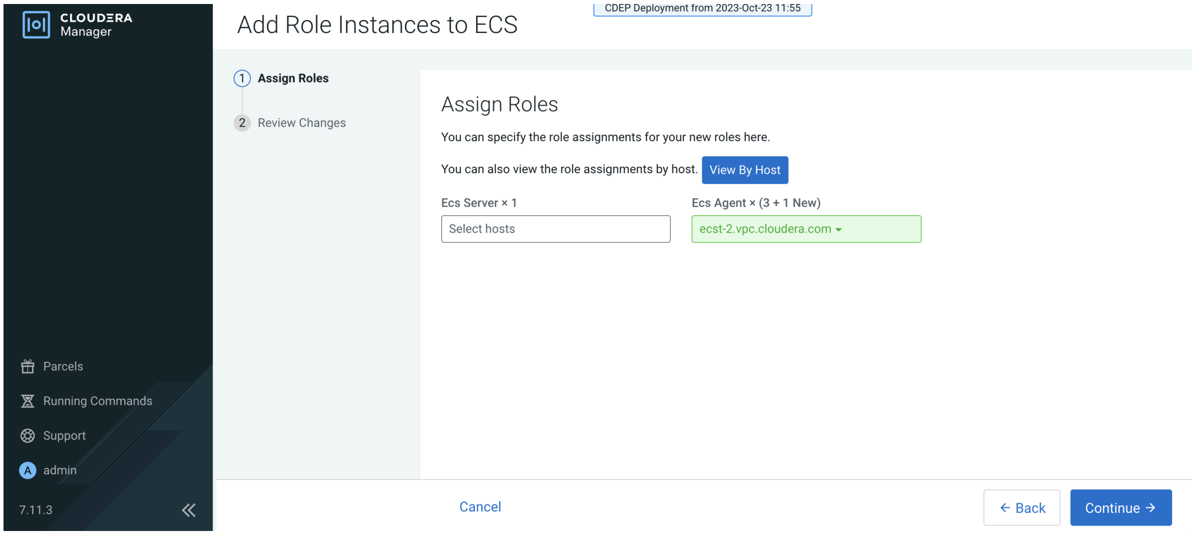
Select hosts for a new or existing role. The host list is filtered to remove hosts that are not valid candidates; these include hosts that are unhealthy, members of other clusters, or have an incompatible version of the software installed on them.

Enter hostnames: host01, IP addresses or rack

□	Hostname	IP Address	Rack	Cores	Physical Memory	Existing Roles	Added Roles
□	dh-centos79-1.vpc.cloudera.com	10.65.203.160	/default	8	30.8 GiB	DS ES	
☑	dh-centos79-2.vpc.cloudera.com	10.65.194.119	/default	8	30.5 GiB	DS EA	EA
☑	dh-centos79-3.vpc.cloudera.com	10.65.194.114	/default	8	30.8 GiB	DS EA	EA
☑	ecst-1.vpc.cloudera.com	10.65.217.129	/default	8	30.8 GiB	DS EA	EA
☑	ecst-2.vpc.cloudera.com	10.65.221.113	/default	8	30.8 GiB	DS	EA

1 - 5 of 5

d. On the Assign Roles page, click Continue.



Add Role Instances to ECS

Assign Roles

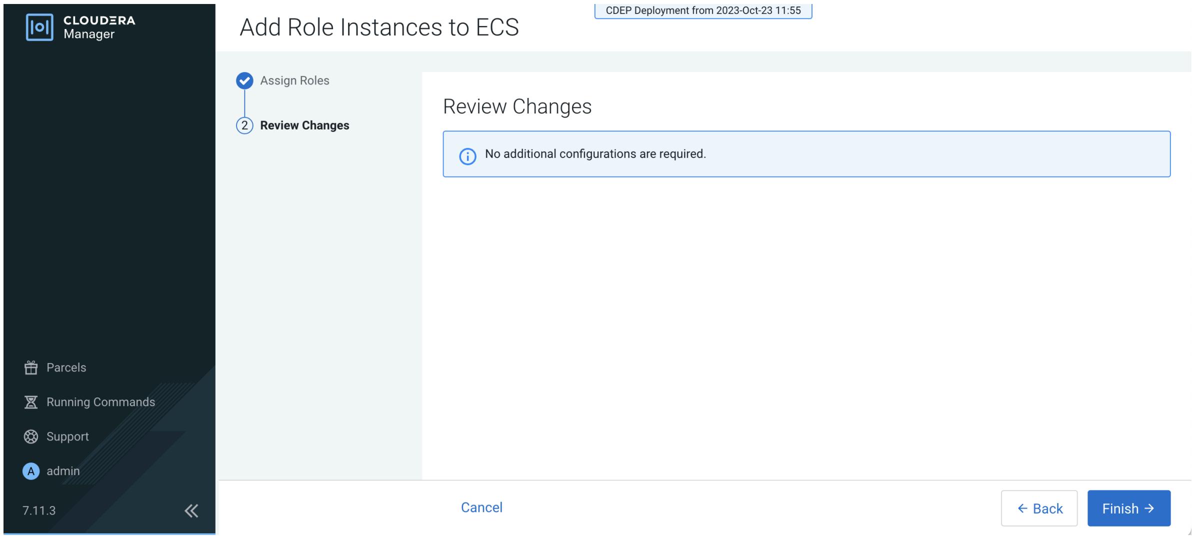
You can specify the role assignments for your new roles here.

You can also view the role assignments by host.

Ecs Server × 1: Select hosts

Ecs Agent × (3 + 1 New): ecst-2.vpc.cloudera.com

e. On the Review Changes page, click Finish.

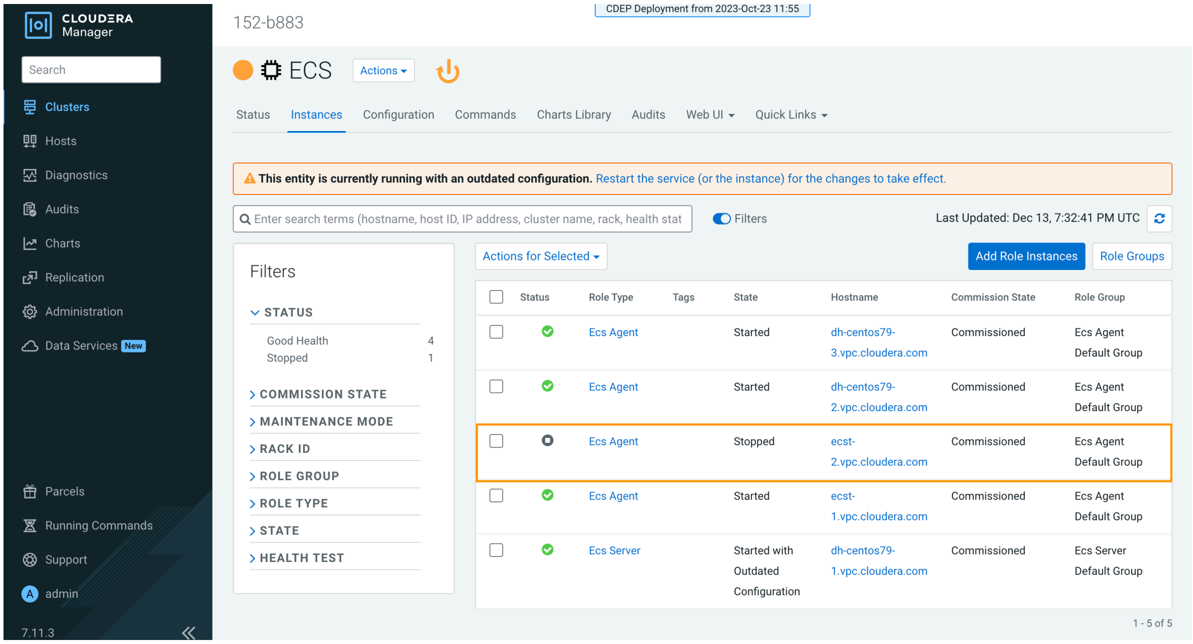


Add Role Instances to ECS

Review Changes

No additional configurations are required.

f. The new host is listed on the ECS Instances page.

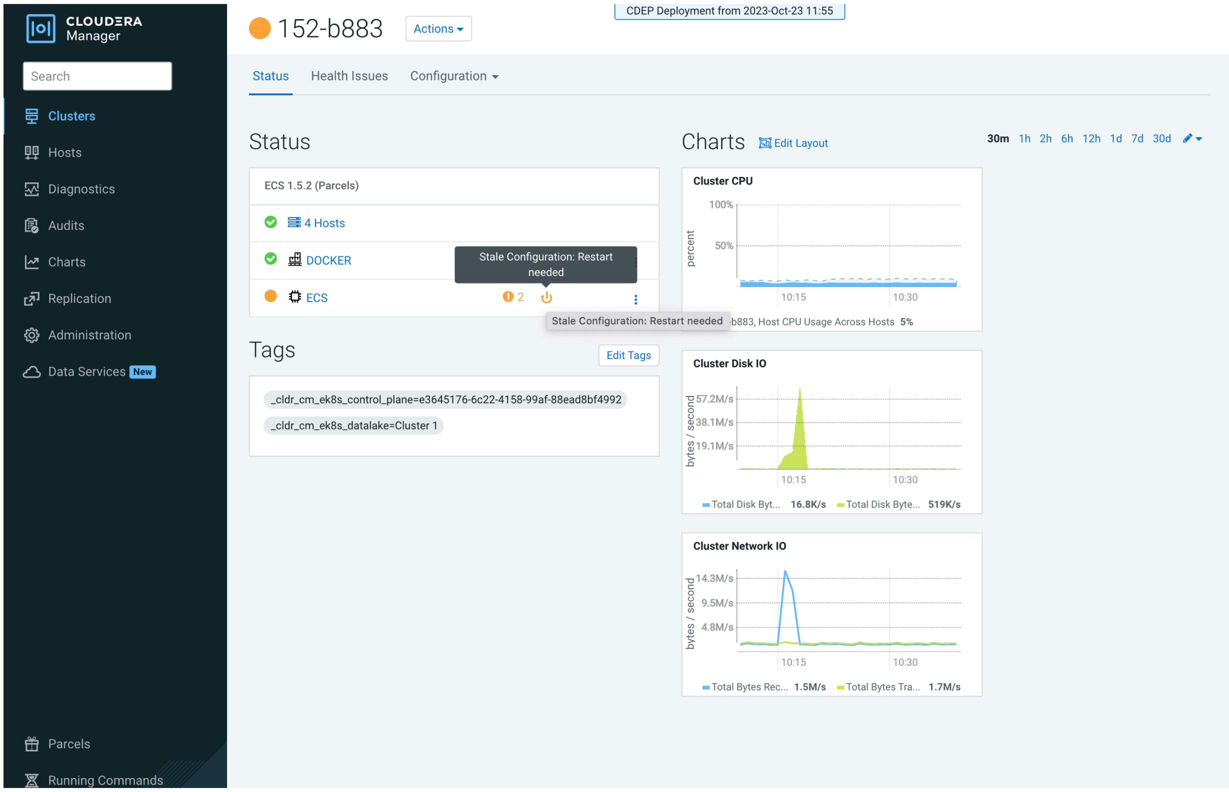


This entity is currently running with an outdated configuration. Restart the service (or the instance) for the changes to take effect.

Last Updated: Dec 13, 7:32:41 PM UTC

□	Status	Role Type	Tags	State	Hostname	Commission State	Role Group
□	✓	Ecs Agent		Started	dh-centos79-3.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	✓	Ecs Agent		Started	dh-centos79-2.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	●	Ecs Agent		Stopped	ecst-2.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	✓	Ecs Agent		Started	ecst-1.vpc.cloudera.com	Commissioned	Ecs Agent Default Group
□	✓	Ecs Server		Started with Outdated Configuration	dh-centos79-1.vpc.cloudera.com	Commissioned	Ecs Server Default Group

17. Restart the ECS cluster by clicking the ECS Restart icon, or by selecting Actions > Restart on the ECS cluster home page.



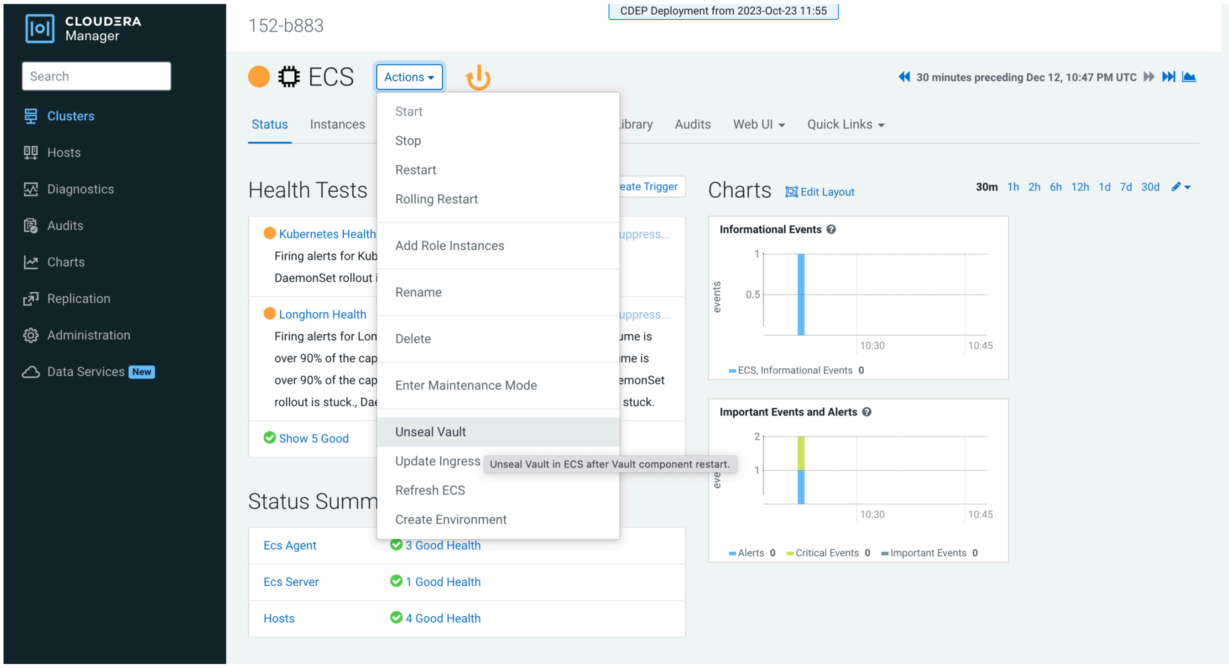
Stale Configuration: Restart needed

Stale Configuration: Restart needed

_cldr_cm_ek8s_control_plane=e3645176-6c22-4158-99af-88ead8bf4992

_cldr_cm_ek8s_datalake=Cluster 1

18. Click ECS on the ECS cluster home page, then select Actions > Unseal Vault.



Kubernetes Health
Firing alerts for Kub
DaemonSet rollout i

Longhorn Health
Firing alerts for Lon ume is
over 90% of the cap me is
over 90% of the cap emonSet
rollout is stuck., Dae stuck.

Unseal Vault in ECS after Vault component restart.

Ecs Agent	3 Good Health
Ecs Server	1 Good Health
Hosts	4 Good Health

Starting, stopping, restarting, and refreshing Embedded Container Service Clusters

Procedures to start, stop, restart, and refresh Private Cloud Experience clusters

Starting a Embedded Container Service Cluster

Procedure

1. On the Home Status tab, click the Actions Menu to the right of the Embedded Container Service cluster name and select Start.
2. Click the Start button that appears in the next screen to confirm. The Command Details window shows the progress of starting services.

Results

When the All services successfully started message appears, the task is complete and you can close the Command Details window.

Stopping a CDP Private Cloud Data Services Cluster

Procedure

1. On the Home Status tab, click the Actions Menu to the right of the Embedded Container Service cluster name and select Stop.
2. Click the Stop button in the confirmation screen. The Command Details window shows the progress of stopping services.

Results

When the All services successfully stopped message appears, the task is complete and you can close the Command Details window.

Note: The cluster-level Stop action does not stop the Cloudera Management Service. You must stop the Cloudera Management Service separately.

Restarting a Embedded Container Service Cluster

Procedure

1. On the Home Status tab, click the Actions Menu to the right of the cluster name and select Restart.
2. Click the Restart button that appears in the next screen to confirm.
   The Command Details window shows the Rolling Restart of services in the cluster. When all the services are restarted successfully, the task is complete and you can close the Command Details window.
3. Click Actions Unseal Vault

Rolling Restart of an Embedded Container Service Cluster

Procedure

1. On the Home Status tab, click the Actions Menu to the right of the cluster name and select Rolling Restart.
2. Click the Rolling Restart button that appears in the next screen to confirm. On this screen, you can select the services (Docker or /and ECS), Roles (Workers only, Non-workers only, All Roles).

   Note: Workers only refers to ECS agents, Non-workers only refers to all docker roles and ECS server.

   The Command Details window shows the progress of rolling restart of a batch of nodes. Here, batch size refers to the number of worker roles that can be restarted in parallel. The Batch size is 1 by default.
3. Click Actions Unseal Vault

Configuring Restart for an Embedded Container Service cluster

Procedure

1. Navigate to the ECS service, Home Configuration tab.
2. Select Node Readiness Timeout OR Drain Node Timeout configurations to configure overall restart time for an ECS cluster.

   Note: Node Readiness Timeout is the maximum time for rescheduling workloads on a new node. This is 5 minutes by default.

   Note: Drain Node Timeout is the time out to drain a node. This is 5 minutes by default.

   Table 1: ECS Cluster Actions and Performance Impact

ECS Cluster action	Affects Availability	Impact
Stop and Start	Yes	All nodes
Restart	Least	one node at a time
Rolling restart (if the agent batch size is 1 then it is similar to Restart).	Inversely proportional to the batch size.	Depends on batch size.

Refreshing a Embedded Container Service Cluster

Procedure

To refresh a cluster, in the Home Status tab, click the Actions Menu to the right of the cluster name and select Refresh Cluster.

Note:

Refreshing an ECS cluster, runs a cluster refresh action to bring the configuration up to date without restarting all services.

Monitoring Embedded Container Service Clusters

Procedures to monitor Embedded Container Service clusters

Related Information

Monitoring Services

Monitoring Clusters

Docker Server Health Tests

ECS Health Tests

ECS Agent Health Tests

ECS Server Health Tests

Docker Server Metrics

ECS Agent Metrics

ECS Server Metrics

Viewing Health Status

Procedure

1. Open the Cloudera Manager Admin Console.

2. From the Home page, Click on the Embedded Container Service cluster.
3. Click on the ECS or Docker service.

Results

The Service status page displays the Health Test, Status Summary and Health History of the services.

Viewing the Kubernetes Dashboard

About this task

The Kubernetes Dashboard displays configuration and other information about the embedded Kubernetes infrastructure used in the Embedded Container Service cluster. Although you can make configuration changes using the dashboard (if you have the appropriate permissions), you should not make any changes using the dashboard. Cloudera Support may use the dashboard to diagnose problems with the cluster.

Procedure

1. In the Cloudera Manager Admin Console, go to the ECS service.
2. Click Web UIECS Web UI

Results

The Kubernetes Dashboard displays.

Viewing the Private Cloud Management Console

Procedure

1. In the Cloudera Manager Admin Console, go to the ECS service.
2. Click Web UIConsole

Results

The CDP Management Console displays.

Performing maintenance of a single host in the Embedded Container Service cluster

You can perform maintenance on the nodes in your ECS cluster by shutting down the nodes one at a time.

Before you begin

- The containerized cluster must be configured for ECS Server high availability to reduce the downtime.
- You must be able to log into the nodes as root or have sudo privileges.
- The node to be maintained must have a status of Ready. A status of NotReady may suggest the node is having other complicating issues. Run the following command on an ECS server node to verify status of the nodes.

```
/var/lib/rancher/rke2/bin/kubectl --kubeconfig=/etc/rancher/rke2/rke2.yaml
 get nodes
```

Procedure

1. Log in to the Cloudera Manager Admin Console.

2. Stop the ECS role and the Docker server role on the host.
   - Click the Hosts tab.
   - Select the Host->Action->Stop roles on the host.
3. Perform the maintenance on the host.
4. Reboot the host.
5. Log in to the Cloudera Manager Admin Console.
6. Click the Action menu next to the ECS cluster and select Start roles on the host.
7. Click ActionsRefresh ECS Cluster.
8. Go to the ECS service page and verify that the Vault is not sealed. This information displays in the Health Tests section.
9. If the Vault is sealed, click Actions Unseal Vault .

Performing the maintenance of all hosts in the Embedded Container Service cluster

If you want to perform the maintenance of all hosts in the ECS cluster follow below steps:

Procedure

1. Log in to the Cloudera Manager Admin Console.
2. Click the Action menu next to the ECS cluster and select Stop.
3. Perform the maintenance on all the hosts.
4. Reboot the hosts.
5. Log in to the Cloudera Manager Admin Console.
6. Click the Action menu next to the ECS cluster and select Start.
7. Click Actions Refresh ECS Cluster .
8. Go to the ECS service page and verify that the Vault is not sealed. This information displays in the Health Tests section.
9. If the Vault is sealed, click Actions Unseal Vault .

Configuring a containerized cluster with SELinux

You can configure a containerized cluster with SELinux to enable it to run the Embedded Container Service (ECS).

Procedure

1. Ensure that the hosts you use for the containerized cluster meet all hardware and software requirements for use with CDP Private Cloud Data Services.
2. Enable SELinux in Permissive mode by updating the /etc/selinux/config file on all ECS hosts by running the following commands:

   ```
   sed -i 's/SELINUX=disabled/SELINUX=permissive/' /etc/selinux/config
   reboot
   ```

3. Add the SELinux policies provided by RKE2 by installing the RPMs on all ECS hosts. Use the following commands:

   ```
   yum localinstall -y http://mirror.centos.org/centos/7/extras/x86_64/Pack
   ages/container-selinux-2.107-3.el7.noarch.rpm
   wget https://github.com/rancher/rke2-selinux/releases/download/v0.8.stable
   .2/rke2-selinux-0.8-2.el7.noarch.rpm
   yum install -y rke2-selinux-0.8-2.el7.noarch.rpm
   ```

4. Uninstall the nscd service by running the following command on all ECS hosts :

   ```
   yum erase -y nscd
   ```

5. Install a containerized cluster on all hosts. See Adding a CDP Private Cloud Data Services cluster.
6. Enable SELinux in Enforced mode by running the following commands on all ECS hosts:

   ```
   setenforce 1
   ```

   You can confirm that SELinux is running in Enforced mode by running the following command:

   ```
   getenforce
   ```

7. Verify that the ECS cluster hosts are sending heartbeats to the Cloudera Manager server.
   a) Open the Cloudera Manager Admin Console.
   b) Click Hosts All Hosts .
   c) Check the Last Heartbeat column for heartbeat status.
8. Verify that your workloads are functioning as expected.

Decommissioning ECS Hosts

You can decommission ECS hosts and remove them from the cluster.

About this task

1. Cordon the node. Longhorn will automatically disable the node scheduling when a Kubernetes node is cordoned. Run the following command on any ECS Server host:

   ```
   kubectl cordon [***node***]
   ```

2. Drain the node to move the workload to somewhere else. Run the following command on any ECS Server host:

   ```
   kubectl drain [***node***] --ignore-daemonsets --pod-selector='app!=csi-at
   tacher,app!=csi-provisioner' --delete-emptydir-data
   ```

3. Detach all the volumes on the node. Navigate to the ECS Service page on Cloudera Manager UI.

   a. In the Web UI dropdown, select Storage UI to open the Longhorn UI.

   b. Under the Volume tab in Longhorn UI, select the volumes on this node. Click Detach and select Yes on the screen prompt.

   If the node has been drained, all the workloads should be migrated to another node already.

   If there are any other volumes remaining attached, detach them before continuing.
4. Remove the node from Longhorn using the Delete in the Node tab. Or, remove the node from Kubernetes. Run the following command on any ECS Server host:

   ```
   kubectl delete node [***node-name***]
   ```

   Longhorn will automatically remove the node from the cluster.
5. Uninstall ECS and Docker artifacts from the host. Run below commands on the host:

   ```
   cd /opt/cloudera/parcels/ECS/bin
   ./rke2-killall.sh # usually 2 times is sufficient
   ./rke2-uninstall.sh
   rm -rf /ecs/* # assumes the default defaultDataPath and lsoDataPath
   rm -rf /var/lib/docker_server/* # deletes the auth and certs
   rm -rf /etc/docker/certs.d/* # delete the ca.crt
   ```

```
rm -rf /docker # assumes the default defaultDataPath for docker
```

6. Go to the Hosts page for the ECS Cluster, select that host, and under Actions for Selected, click Begin Maintenance (Suppress Alerts/Decommission)

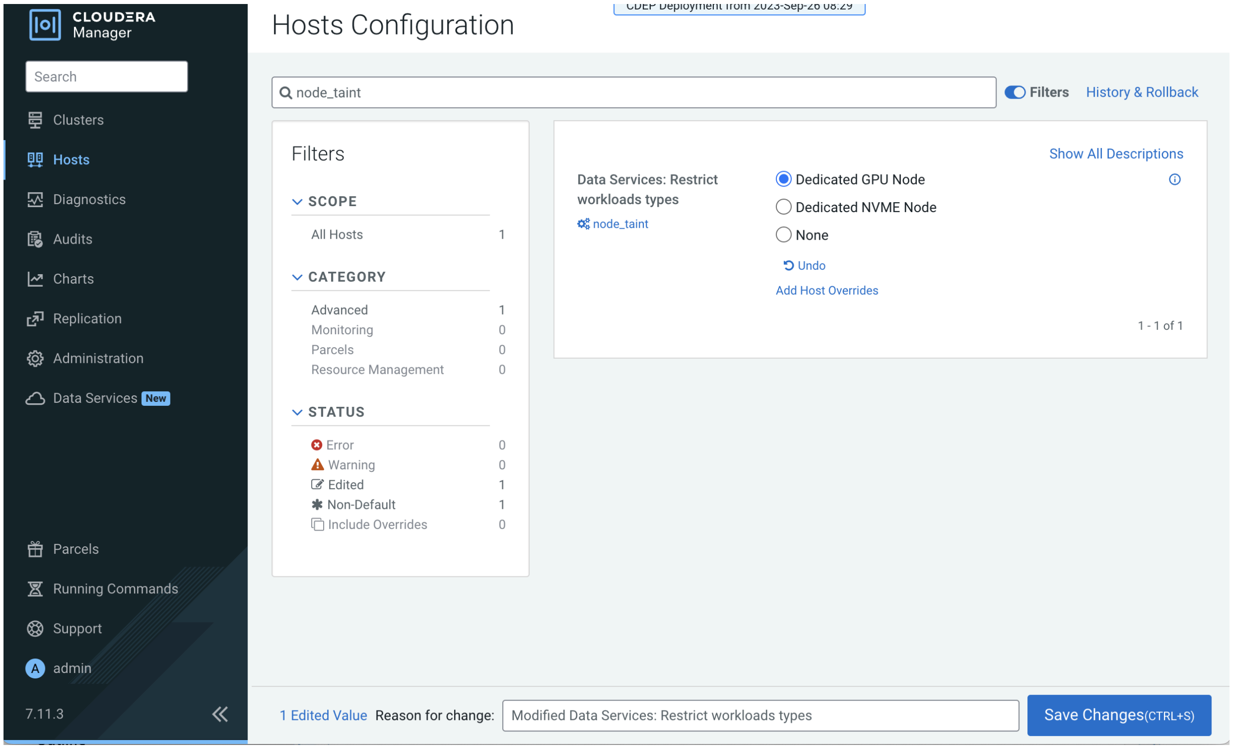
Dedicating ECS nodes for specific workloads

You use Cloudera Manager to dedicate Embedded Container Service (ECS) cluster nodes for specific workloads. You can dedicate GPU nodes for CML workloads, and NVME nodes for CDW workloads.

Dedicating ECS nodes when creating a new cluster

1. Check the ECS installation requirements.
2. Add the new hosts to Cloudera Manager.
3. In Cloudera Manager, click Hosts > All Hosts, then select one or more of the new ECS hosts.
4. Click the Configuration tab, then use the Search box to locate the node_taint configuration property.
5. Select Dedicated GPU Node to dedicate the node for CML workloads, or select Dedicated NVME node to dedicate the node for CDW workloads.

   When either of these options are selected, no other workload pods will be allowed to run on the dedicated node.



Hosts Configuration

node_taint

Data Services: Restrict workloads types
node_taint

● Dedicated GPU Node
○ Dedicated NVME Node
○ None

1 Edited Value Reason for change: Modified Data Services: Restrict workloads types

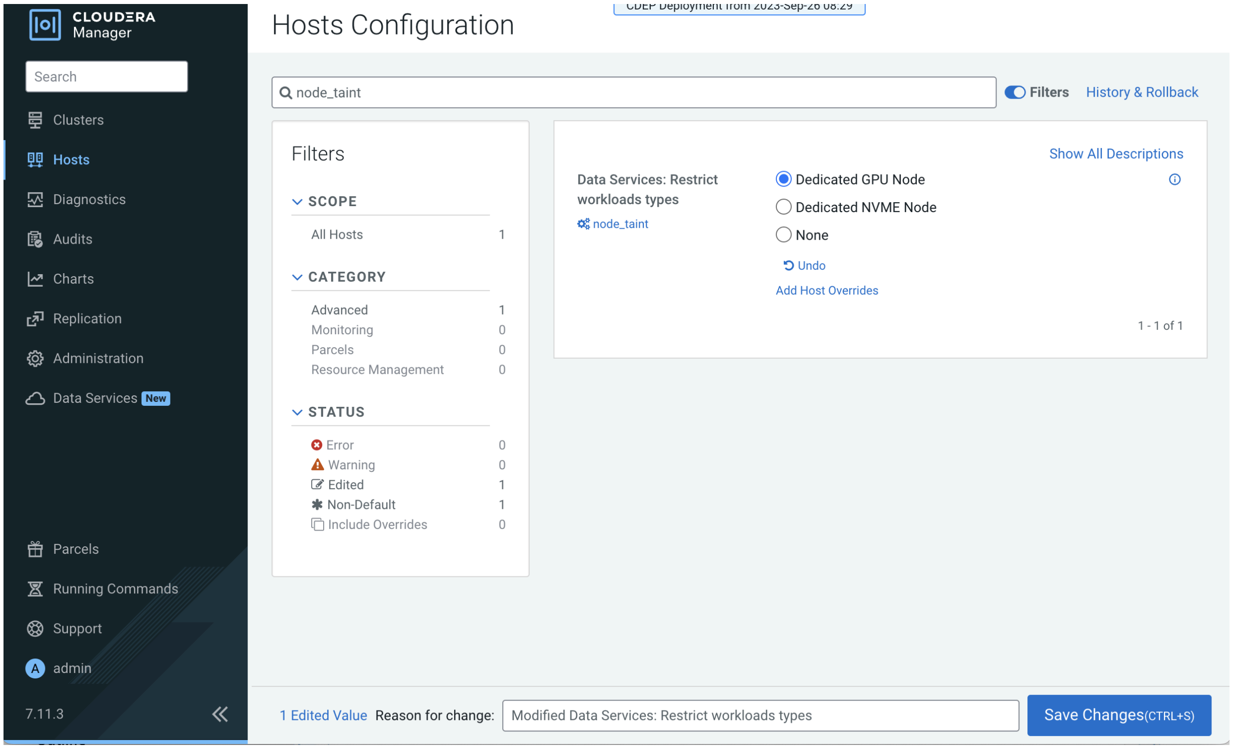
6. Click Save Changes.
7. Repeat the previous steps to add the other ECS hosts to Cloudera Manager and assign workload types.
8. Follow the ECS installation procedure. When you reach the Specify Hosts page in the installation wizard, the hosts you added to Cloudera Manager appear. Select the hosts, click Continue, then proceed through the rest of the installation wizard.
9. After the installation is complete, the applicable workloads will only run on the specified dedicated nodes.

Dedicating ECS nodes in an existing cluster

1. Open the Cloudera Manager Admin Console.
2. On the Home page, click the ECS Cluster.

3. Click Hosts, select one or more of the ECS hosts, then click the Configuration tab.
4. Click the Configuration tab, then use the Search box to locate the node_taint configuration property.
5. Select Dedicated GPU Node to dedicate the node for CML workloads, or select Dedicated NVME node to dedicate the node for CDW workloads.

   When either of these options are selected, no other workload pods will be allowed to run on the dedicated node.



Hosts Configuration

node_taint

Data Services: Restrict workloads types
node_taint

● Dedicated GPU Node
○ Dedicated NVME Node
○ None

Reason for change: Modified Data Services: Restrict workloads types

6. Click Save Changes.
7. Repeat the previous steps to assign workload types to the other ECS hosts.
8. On the ECS Cluster landing page, click Actions > Refresh Cluster.
9. After the Refresh is complete, click Actions > Rolling Restart.

Specifying racks for ECS clusters

You use Cloudera Manager to assign Embedded Container Service (ECS) cluster hosts to a specific rack.

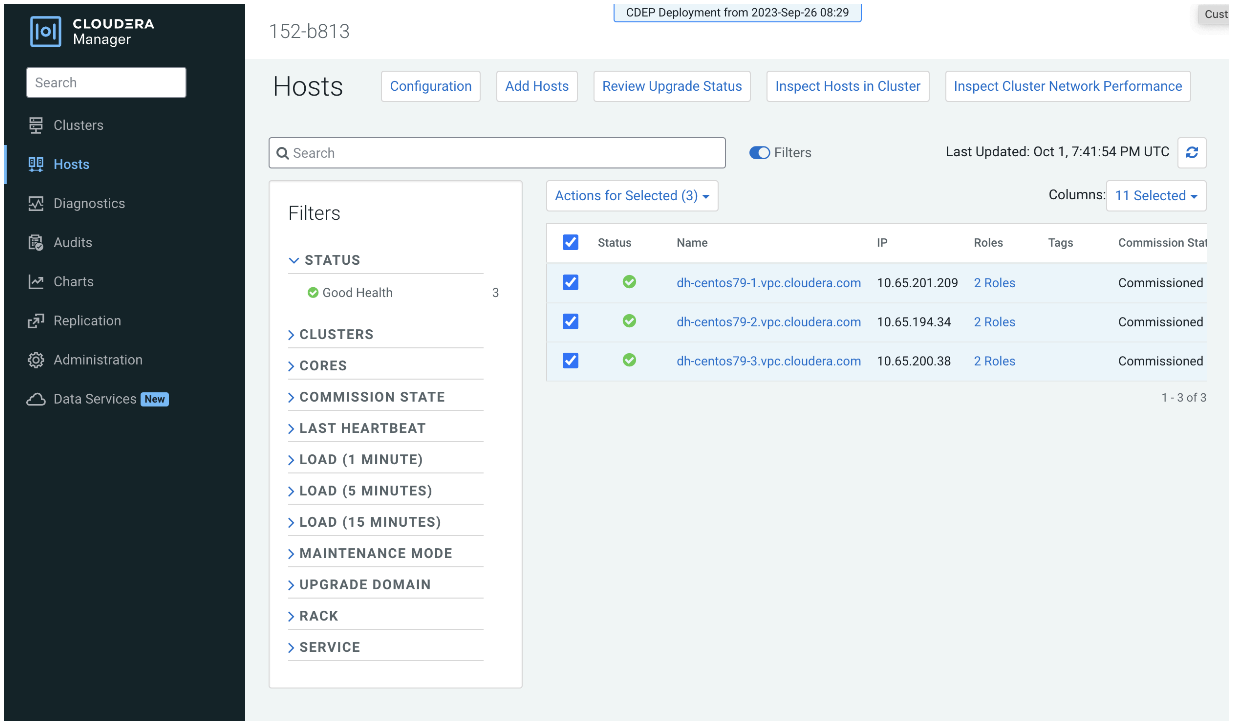
About this task

- All hosts in an ECS cluster must have the same assigned rack name and path structure. A configuration error will occur if the rack names do not match.
- ECS cluster hosts with no specified rack name are assigned the default rack name value. The default value means that no rack name has been specified for the ECS cluster hosts.

Specifying a rack name for an ECS cluster

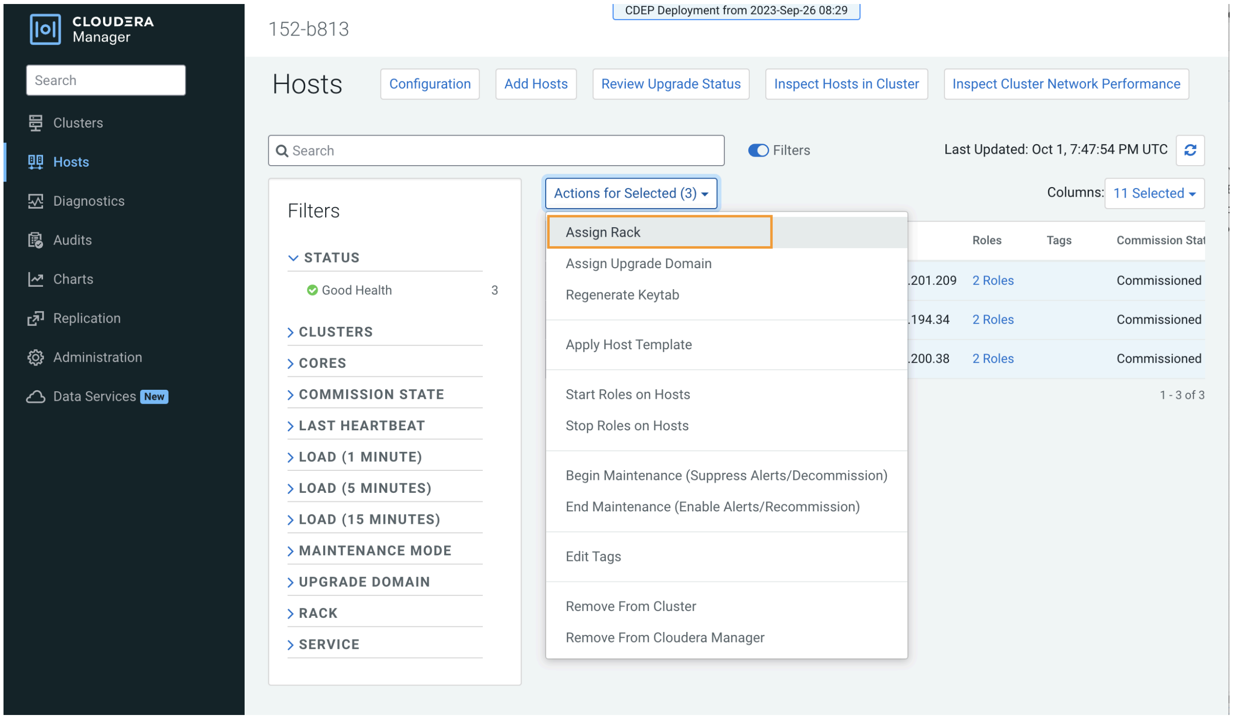
1. In Cloudera Manager, select the ECS cluster, then click Hosts.

2. In the Hosts list, click the top checkbox to select all of the cluster hosts.



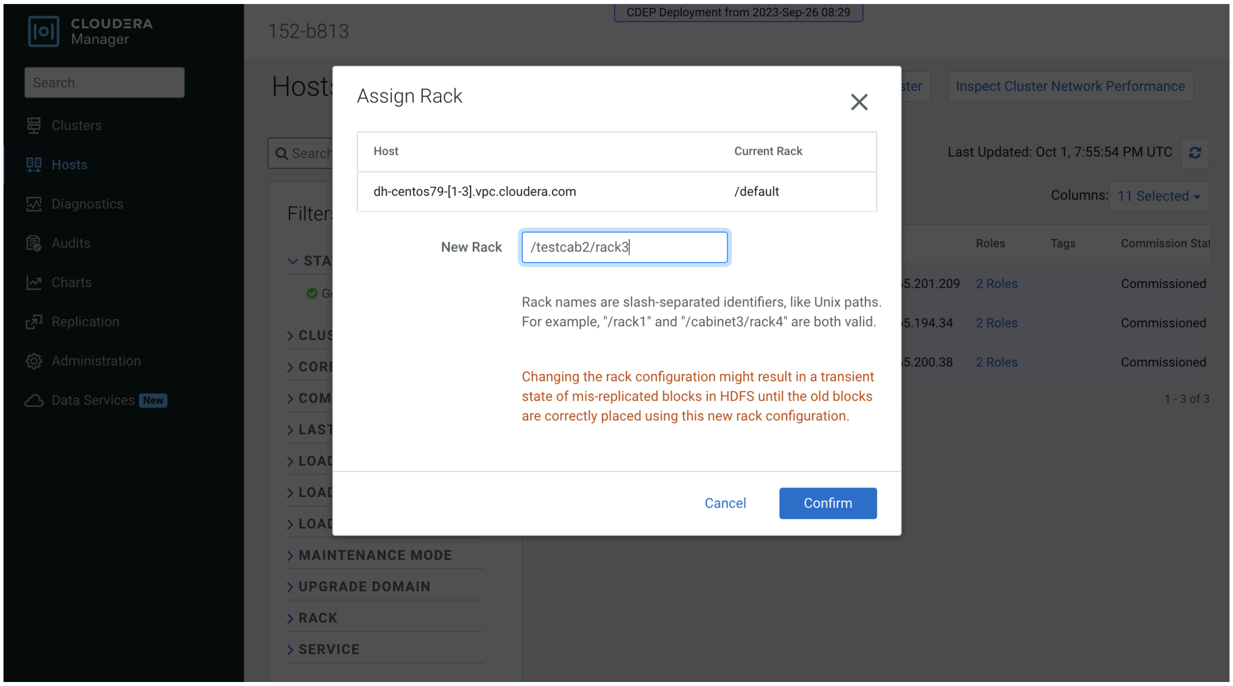
☑	Status	Name	IP	Roles	Tags	Commission Stat
☑	✓	dh-centos79-1.vpc.cloudera.com	10.65.201.209	2 Roles		Commissioned
☑	✓	dh-centos79-2.vpc.cloudera.com	10.65.194.34	2 Roles		Commissioned
☑	✓	dh-centos79-3.vpc.cloudera.com	10.65.200.38	2 Roles		Commissioned

3. Click Actions for Selected, then click Assign Rack.



	Roles	Tags	Commission Stat
.201.209	2 Roles		Commissioned
.194.34	2 Roles		Commissioned
.200.38	2 Roles		Commissioned

4. On the Assign Rack popup, enter a rack name in the New Rack box, then click Confirm.



Assign Rack

Host	Current Rack
dh-centos79-[1-3].vpc.cloudera.com	/default

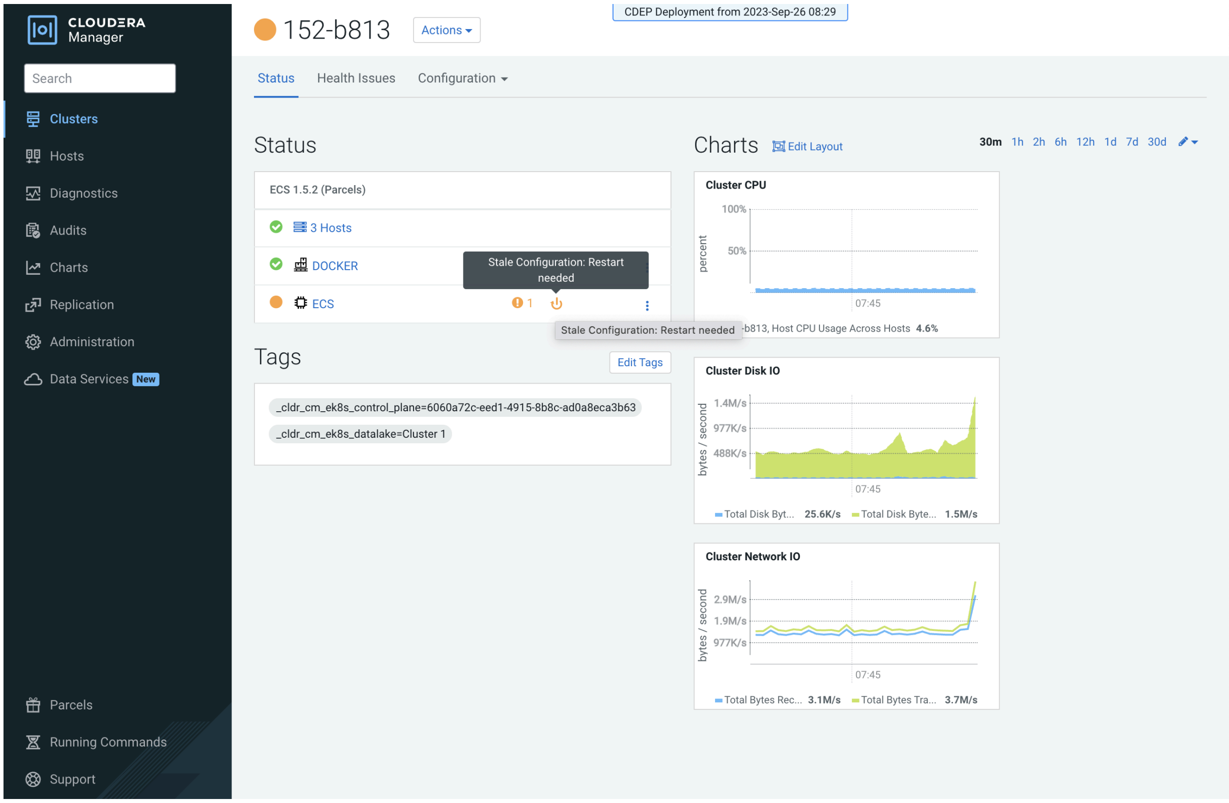
New Rack: /testcab2/rack3

Rack names are slash-separated identifiers, like Unix paths. For example, "/rack1" and "/cabinet3/rack4" are both valid.

Changing the rack configuration might result in a transient state of mis-replicated blocks in HDFS until the old blocks are correctly placed using this new rack configuration.

Cancel Confirm

5. Cloudera Manager detects this configuration change, and displays a Stale Configuration warning. You must restart the cluster in order for the updated configuration to take effect.



Status

ECS 1.5.2 (Parcels)

- 3 Hosts
- DOCKER
- ECS 1

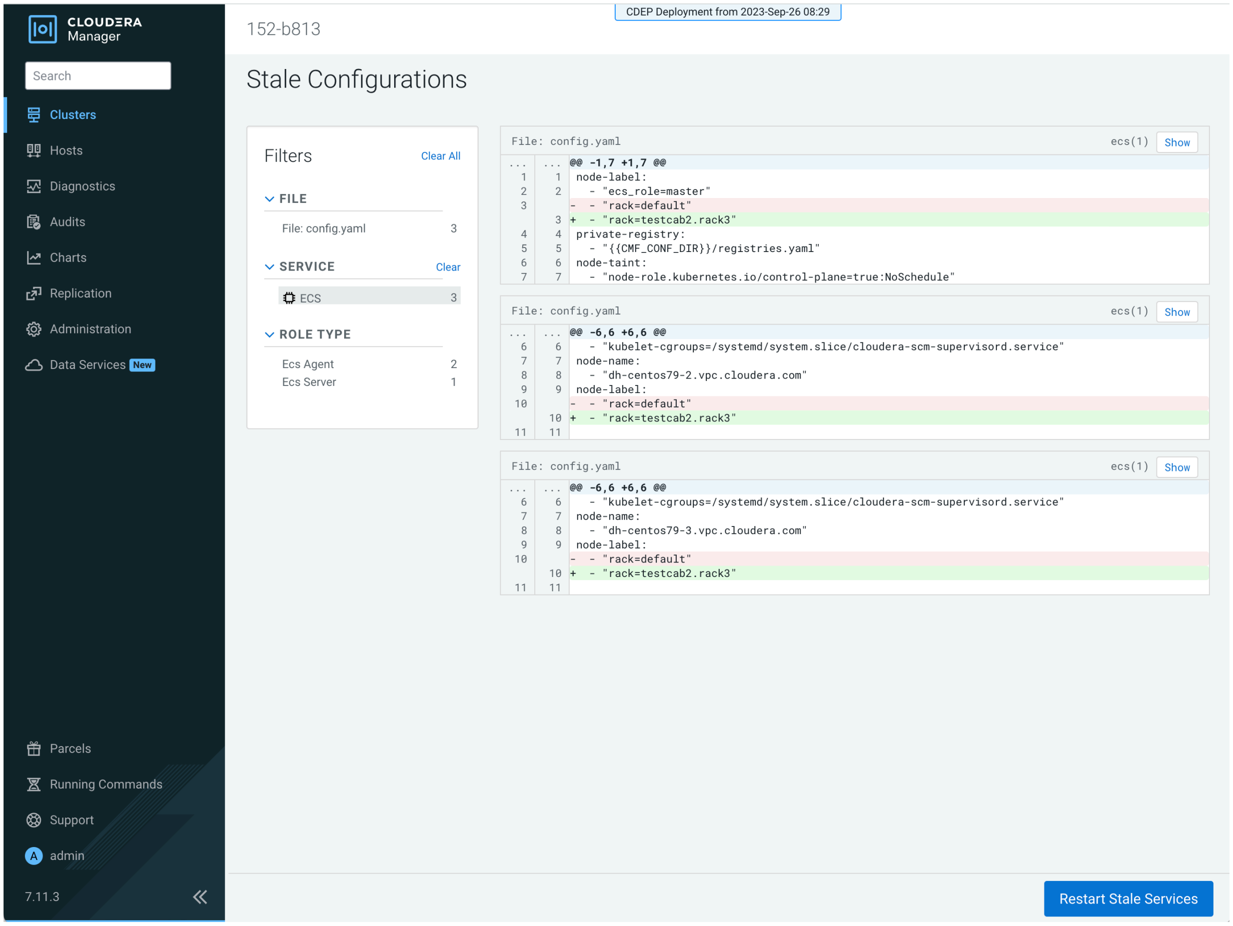
Stale Configuration: Restart needed

Tags

_cldr_cm_ek8s_control_plane=6060a72c-eed1-4915-8b8c-ad0a8eca3b63

_cldr_cm_ek8s_datalake=Cluster 1

6. Click the Stale Configuration icon, then click Restart Stale Services and click through the Restart wizard.



Stale Configurations

Filters Clear All

FILE

File: config.yaml 3

SERVICE Clear

ECS 3

ROLE TYPE

Ecs Agent 2

Ecs Server 1

File: config.yaml ecs(1) Show

```
@@ -1,7 +1,7 @@
 node-label:
   - "ecs_role=master"
-  - "rack=default"
+  - "rack=testcab2.rack3"
 private-registry:
   - "{{CMF_CONF_DIR}}/registries.yaml"
 node-taint:
   - "node-role.kubernetes.io/control-plane=true:NoSchedule"
```

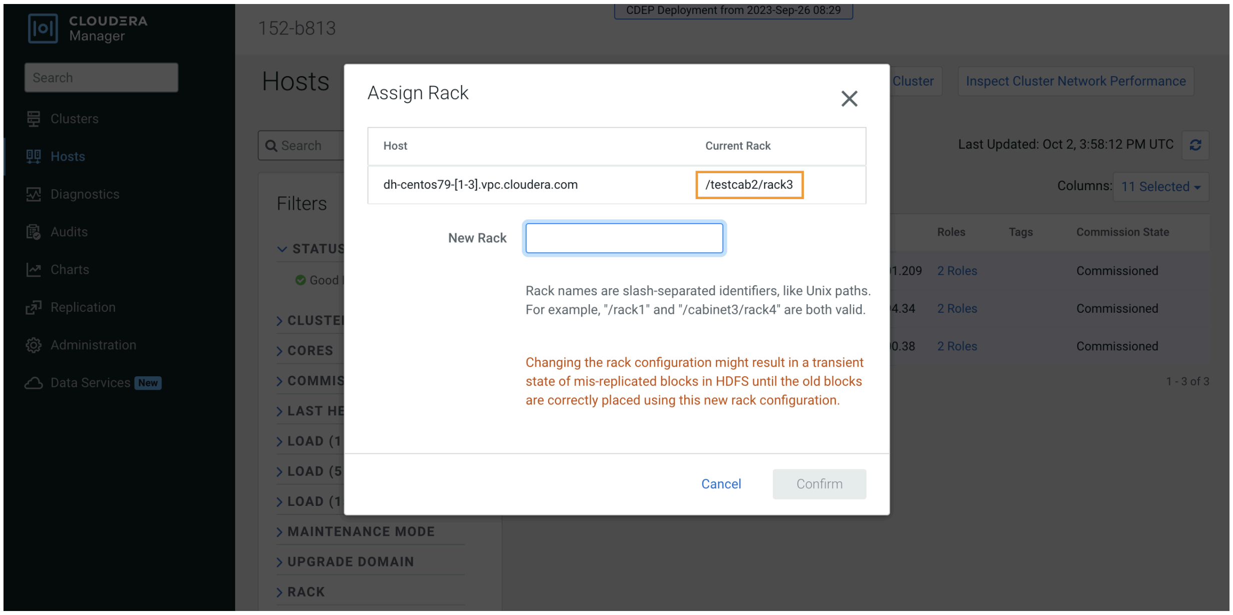
File: config.yaml ecs(1) Show

```
@@ -6,6 +6,6 @@
   - "kubelet-cgroups=/systemd/system.slice/cloudera-scm-supervisord.service"
 node-name:
   - "dh-centos79-2.vpc.cloudera.com"
 node-label:
-  - "rack=default"
+  - "rack=testcab2.rack3"

```

File: config.yaml ecs(1) Show

```
@@ -6,6 +6,6 @@
   - "kubelet-cgroups=/systemd/system.slice/cloudera-scm-supervisord.service"
 node-name:
   - "dh-centos79-3.vpc.cloudera.com"
 node-label:
-  - "rack=default"
+  - "rack=testcab2.rack3"

```

7. When the Restart is complete, you can use the Assign Rack popup to confirm that the new rack name has been applied to the ECS cluster hosts.



Assign Rack

Host	Current Rack
dh-centos79-[1-3].vpc.cloudera.com	/testcab2/rack3

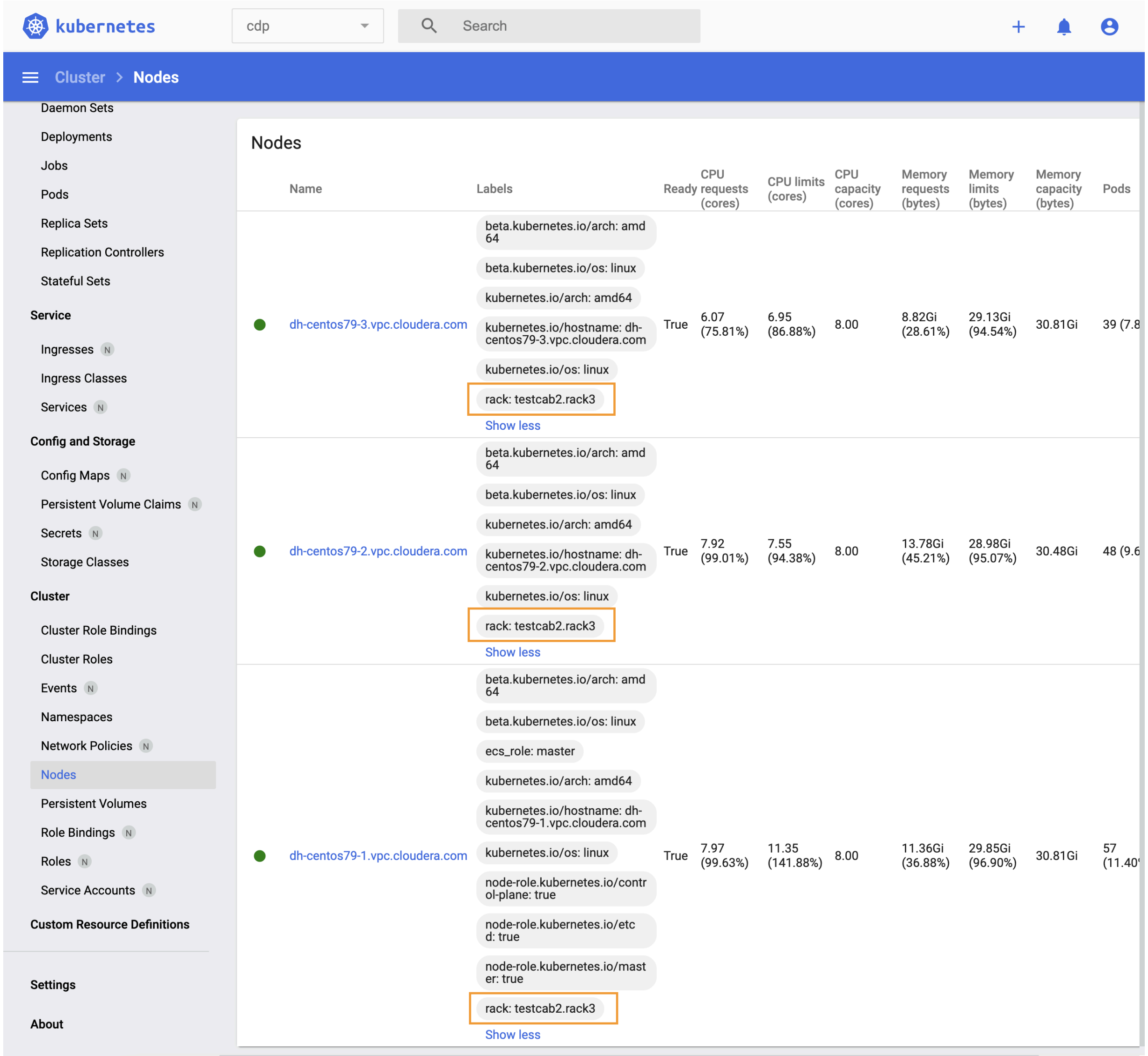
New Rack

Rack names are slash-separated identifiers, like Unix paths. For example, "/rack1" and "/cabinet3/rack4" are both valid.

Changing the rack configuration might result in a transient state of mis-replicated blocks in HDFS until the old blocks are correctly placed using this new rack configuration.

8. You can also use the ECS Web UI to view cluster hose rack assignments. Select the ECS cluster, click ECS, then click Web UI > ECS Web UI . In the Web UI, select the CDP namespace, then click Nodes.

   Note that in Kubernetes periods are used as separators (rather than slashes) in the rack name path. The leading slash is also not used in Kubernetes.



Nodes

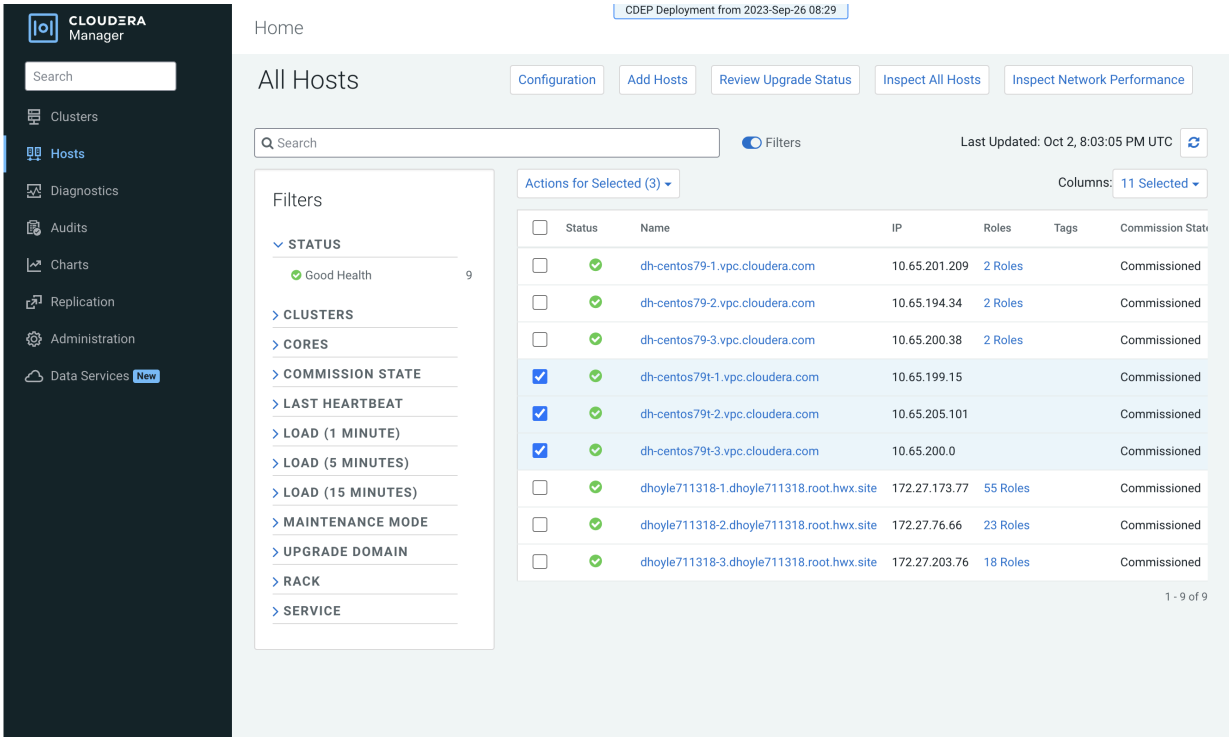
	Name	Labels	Ready	CPU requests (cores)	CPU limits (cores)	CPU capacity (cores)	Memory requests (bytes)	Memory limits (bytes)	Memory capacity (bytes)	Pods
●	dh-centos79-3.vpc.cloudera.com	beta.kubernetes.io/arch: amd64 beta.kubernetes.io/os: linux kubernetes.io/arch: amd64 kubernetes.io/hostname: dh-centos79-3.vpc.cloudera.com kubernetes.io/os: linux rack: testcab2.rack3 Show less	True	6.07 (75.81%)	6.95 (86.88%)	8.00	8.82Gi (28.61%)	29.13Gi (94.54%)	30.81Gi	39 (7.8
●	dh-centos79-2.vpc.cloudera.com	beta.kubernetes.io/arch: amd64 beta.kubernetes.io/os: linux kubernetes.io/arch: amd64 kubernetes.io/hostname: dh-centos79-2.vpc.cloudera.com kubernetes.io/os: linux rack: testcab2.rack3 Show less	True	7.92 (99.01%)	7.55 (94.38%)	8.00	13.78Gi (45.21%)	28.98Gi (95.07%)	30.48Gi	48 (9.6
●	dh-centos79-1.vpc.cloudera.com	beta.kubernetes.io/arch: amd64 beta.kubernetes.io/os: linux ecs_role: master kubernetes.io/arch: amd64 kubernetes.io/hostname: dh-centos79-1.vpc.cloudera.com kubernetes.io/os: linux node-role.kubernetes.io/control-plane: true node-role.kubernetes.io/etcd: true node-role.kubernetes.io/master: true rack: testcab2.rack3 Show less	True	7.97 (99.63%)	11.35 (141.88%)	8.00	11.36Gi (36.88%)	29.85Gi (96.90%)	30.81Gi	57 (11.40

Specifying a rack name when creating a new ECS cluster

Currently the ECS installation wizard does not enable you to assign rack names when creating a new ECS cluster. Therefore, you should first add the new set of ECS hosts to Cloudera Manager, and then assign the rack name in Cloudera Manager. You can then use the ECS installation wizard to create a new ECS cluster using these hosts.

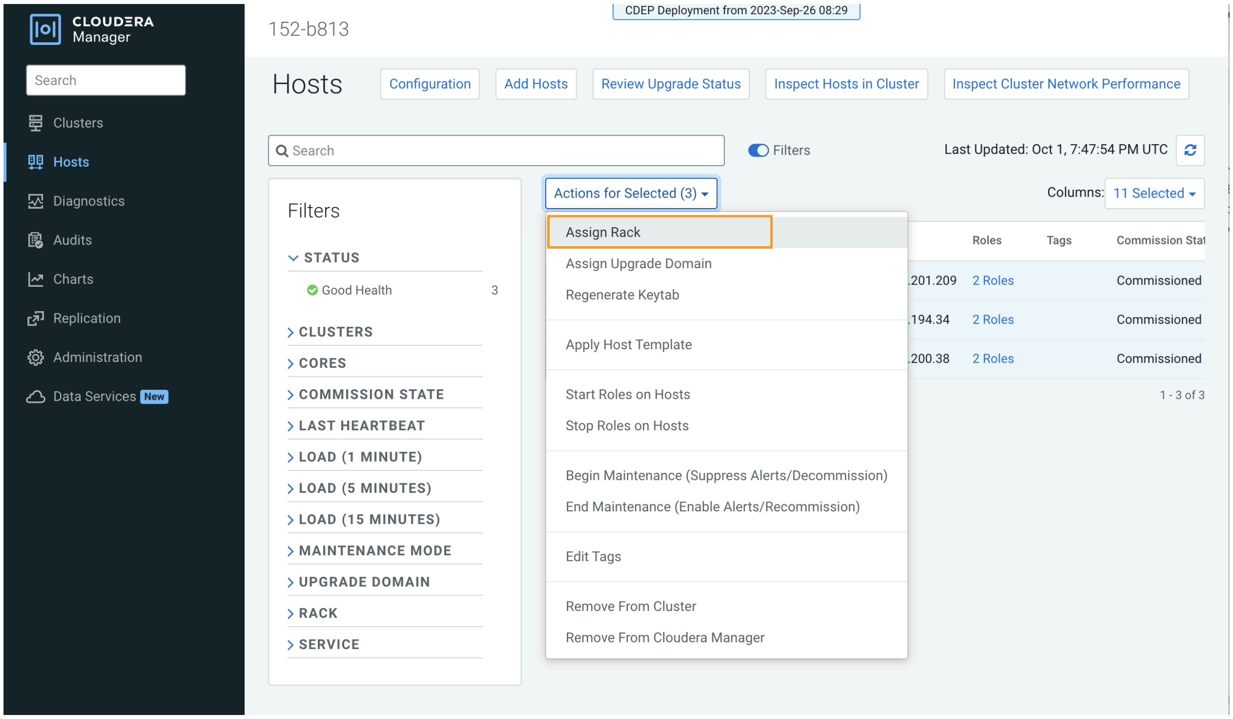
1. Check the ECS installation requirements.
2. Add the new hosts to Cloudera Manager.

3. In Cloudera Manager, click Hosts > All Hosts, then select the hosts you just added.



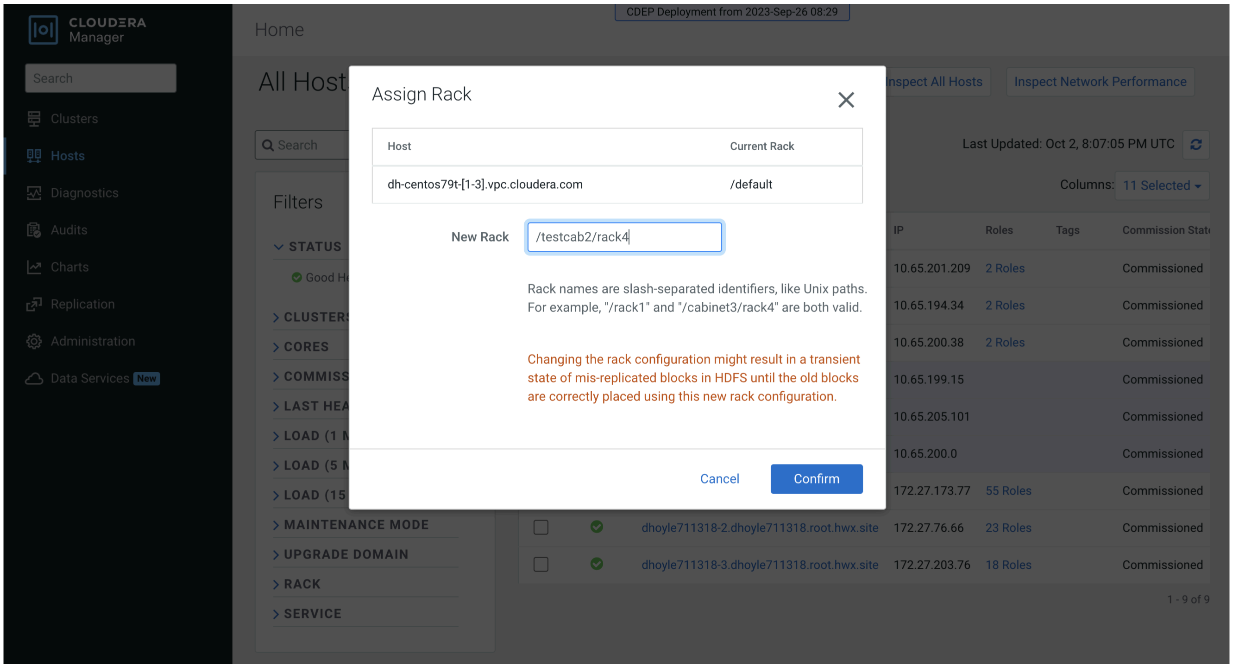
□	Status	Name	IP	Roles	Tags	Commission Stat
□	✓	dh-centos79-1.vpc.cloudera.com	10.65.201.209	2 Roles		Commissioned
□	✓	dh-centos79-2.vpc.cloudera.com	10.65.194.34	2 Roles		Commissioned
□	✓	dh-centos79-3.vpc.cloudera.com	10.65.200.38	2 Roles		Commissioned
☑	✓	dh-centos79t-1.vpc.cloudera.com	10.65.199.15			Commissioned
☑	✓	dh-centos79t-2.vpc.cloudera.com	10.65.205.101			Commissioned
☑	✓	dh-centos79t-3.vpc.cloudera.com	10.65.200.0			Commissioned
□	✓	dhoyle711318-1.dhoyle711318.root.hwx.site	172.27.173.77	55 Roles		Commissioned
□	✓	dhoyle711318-2.dhoyle711318.root.hwx.site	172.27.76.66	23 Roles		Commissioned
□	✓	dhoyle711318-3.dhoyle711318.root.hwx.site	172.27.203.76	18 Roles		Commissioned

4. Click Actions for Selected, then click Assign Rack.



	Roles	Tags	Commission Stat
.201.209	2 Roles		Commissioned
.194.34	2 Roles		Commissioned
.200.38	2 Roles		Commissioned

5. On the Assign Rack popup, enter a rack name in the New Rack box, then click Confirm.



Assign Rack

Host	Current Rack
dh-centos79t-[1-3].vpc.cloudera.com	/default

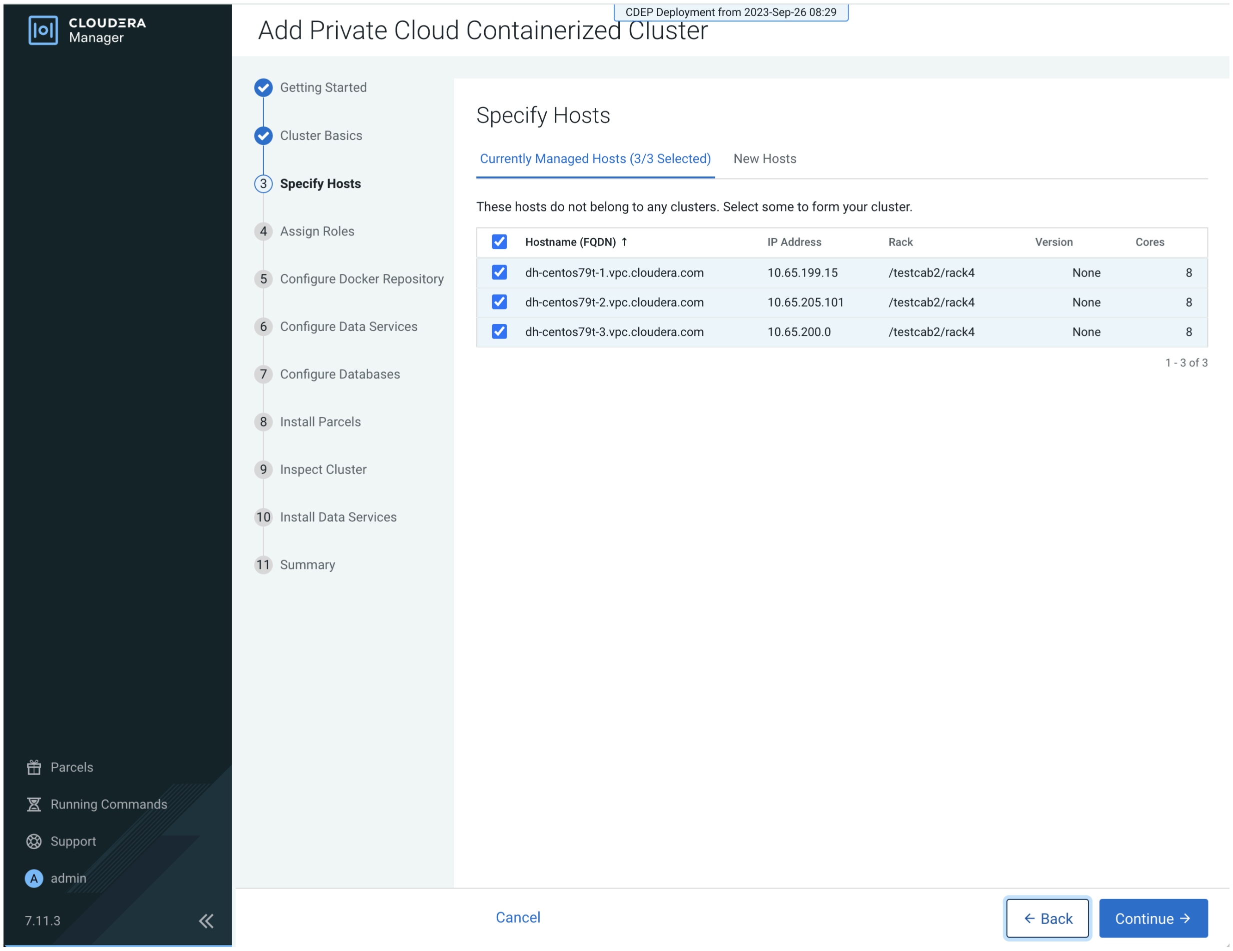
New Rack: /testcab2/rack4

Rack names are slash-separated identifiers, like Unix paths. For example, "/rack1" and "/cabinet3/rack4" are both valid.

Changing the rack configuration might result in a transient state of mis-replicated blocks in HDFS until the old blocks are correctly placed using this new rack configuration.

	IP	Roles	Commission State
	10.65.201.209	2 Roles	Commissioned
	10.65.194.34	2 Roles	Commissioned
	10.65.200.38	2 Roles	Commissioned
	10.65.199.15		Commissioned
	10.65.205.101		Commissioned
	10.65.200.0		Commissioned
	172.27.173.77	55 Roles	Commissioned
dhoyle711318-2.dhoyle711318.root.hwx.site	172.27.76.66	23 Roles	Commissioned
dhoyle711318-3.dhoyle711318.root.hwx.site	172.27.203.76	18 Roles	Commissioned

6. Follow the ECS installation procedure. When you reach the Specify Hosts page in the installation wizard, the hosts you added to Cloudera Manager appear. Select the hosts, click Continue, then proceed through the rest of the installation wizard.



Add Private Cloud Containerized Cluster

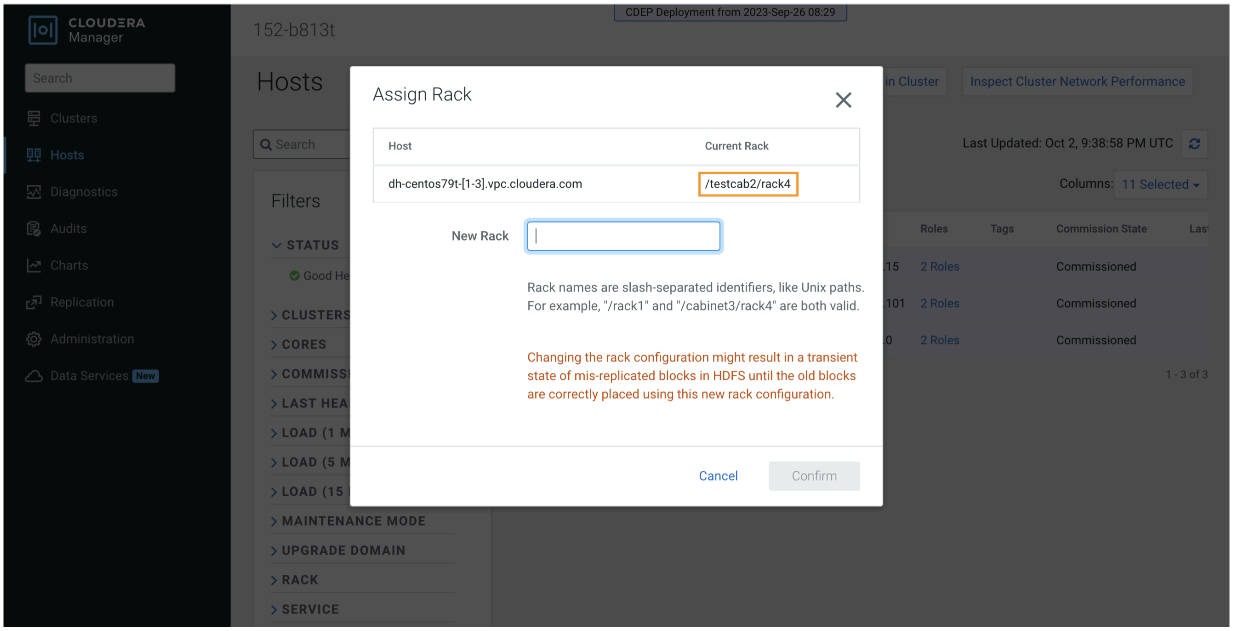
Specify Hosts

These hosts do not belong to any clusters. Select some to form your cluster.

☑	Hostname (FQDN) ↑	IP Address	Rack	Version	Cores
☑	dh-centos79t-1.vpc.cloudera.com	10.65.199.15	/testcab2/rack4	None	8
☑	dh-centos79t-2.vpc.cloudera.com	10.65.205.101	/testcab2/rack4	None	8
☑	dh-centos79t-3.vpc.cloudera.com	10.65.200.0	/testcab2/rack4	None	8

1 - 3 of 3

7. After the installation is complete, you can use the Assign Rack popup or the ECS Web UI to view the rack assignments for the ECS cluster hosts.



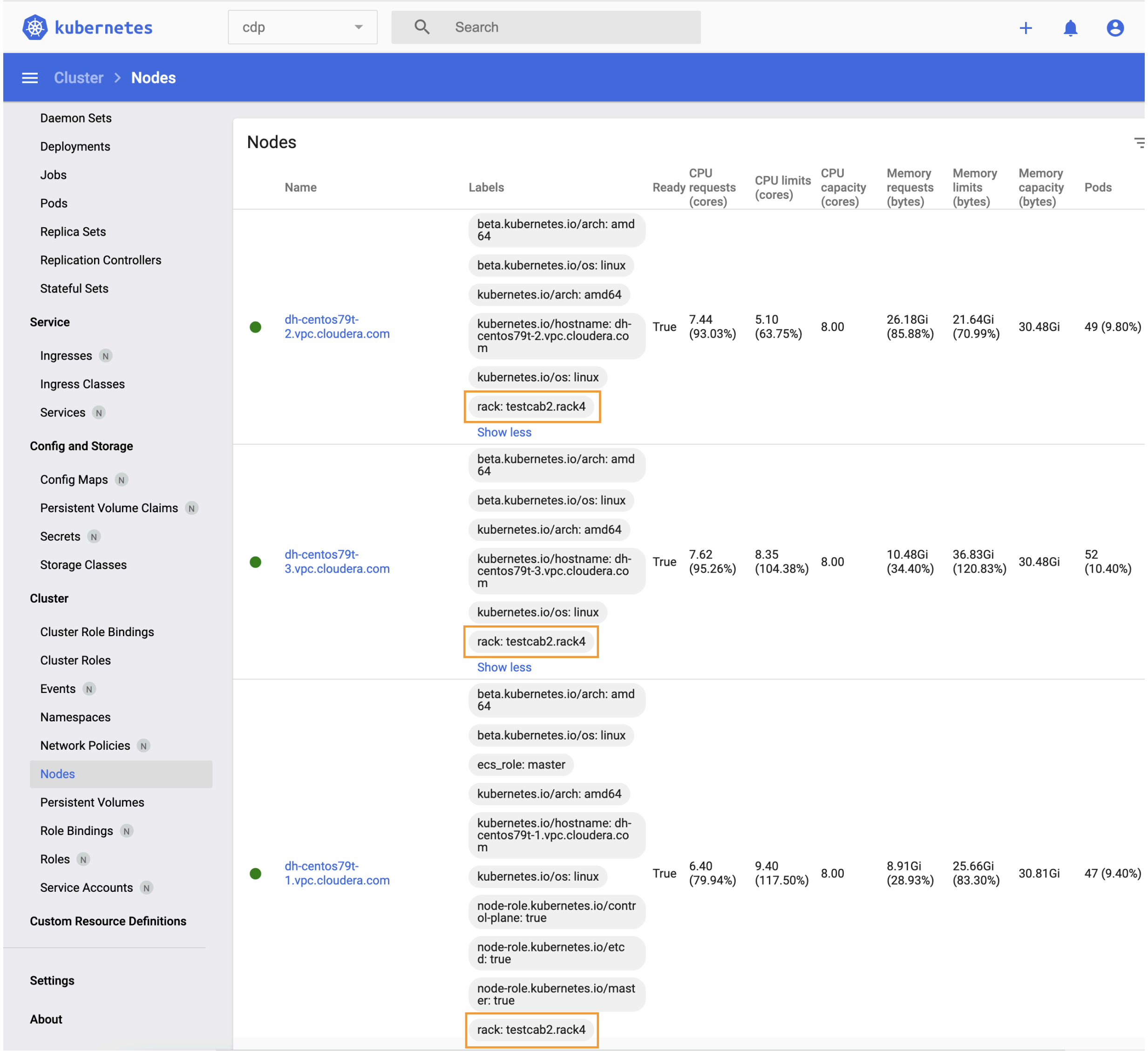
Assign Rack

Host	Current Rack
dh-centos79t-[1-3].vpc.cloudera.com	/testcab2/rack4

New Rack

Rack names are slash-separated identifiers, like Unix paths. For example, "/rack1" and "/cabinet3/rack4" are both valid.

Changing the rack configuration might result in a transient state of mis-replicated blocks in HDFS until the old blocks are correctly placed using this new rack configuration.



Nodes

	Name	Labels	Ready	CPU requests (cores)	CPU limits (cores)	CPU capacity (cores)	Memory requests (bytes)	Memory limits (bytes)	Memory capacity (bytes)	Pods
●	dh-centos79t-2.vpc.cloudera.com	beta.kubernetes.io/arch: amd64 beta.kubernetes.io/os: linux kubernetes.io/arch: amd64 kubernetes.io/hostname: dh-centos79t-2.vpc.cloudera.com kubernetes.io/os: linux rack: testcab2.rack4 Show less	True	7.44 (93.03%)	5.10 (63.75%)	8.00	26.18Gi (85.88%)	21.64Gi (70.99%)	30.48Gi	49 (9.80%)
●	dh-centos79t-3.vpc.cloudera.com	beta.kubernetes.io/arch: amd64 beta.kubernetes.io/os: linux kubernetes.io/arch: amd64 kubernetes.io/hostname: dh-centos79t-3.vpc.cloudera.com kubernetes.io/os: linux rack: testcab2.rack4 Show less	True	7.62 (95.26%)	8.35 (104.38%)	8.00	10.48Gi (34.40%)	36.83Gi (120.83%)	30.48Gi	52 (10.40%)
●	dh-centos79t-1.vpc.cloudera.com	beta.kubernetes.io/arch: amd64 beta.kubernetes.io/os: linux ecs_role: master kubernetes.io/arch: amd64 kubernetes.io/hostname: dh-centos79t-1.vpc.cloudera.com kubernetes.io/os: linux node-role.kubernetes.io/control-plane: true node-role.kubernetes.io/etcd: true node-role.kubernetes.io/master: true rack: testcab2.rack4	True	6.40 (79.94%)	9.40 (117.50%)	8.00	8.91Gi (28.93%)	25.66Gi (83.30%)	30.81Gi	47 (9.40%)

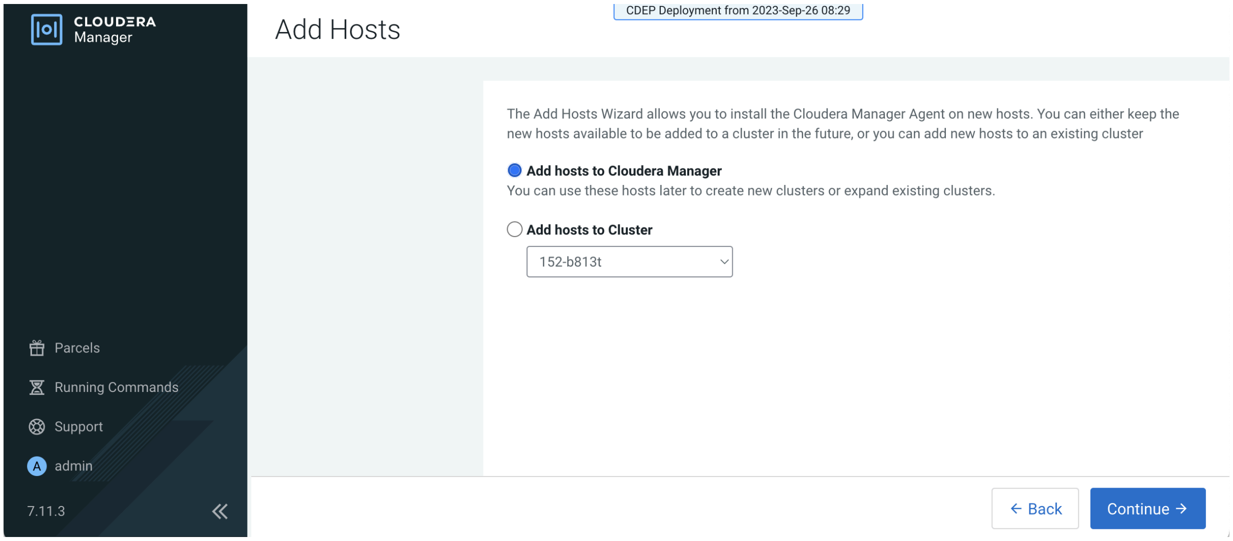
Adding a host to an ECS cluster with a previously specified rack name

When you add a host directly to an ECS cluster, there is no way to specify a rack name for the new host, so it will be assigned the default rack name. A configuration error will occur if you try to add a new host directly to an ECS cluster with a previously specified rack name, since the default rack name of the new host does not match the rack name previously assigned to the other cluster hosts.

Therefore, you should first add the new ECS host to Cloudera Manager, and then use Cloudera Manager to assign the same rack name as the other ECS cluster hosts to the new host. You can then add the new host to the ECS cluster.

1. Check the ECS installation requirements.

2. Add the new hosts to Cloudera Manager. You can also access the Add Hosts wizard by clicking Hosts in the ECS cluster, and then clicking Add Hosts. Select Add hosts to Cloudera Manager.



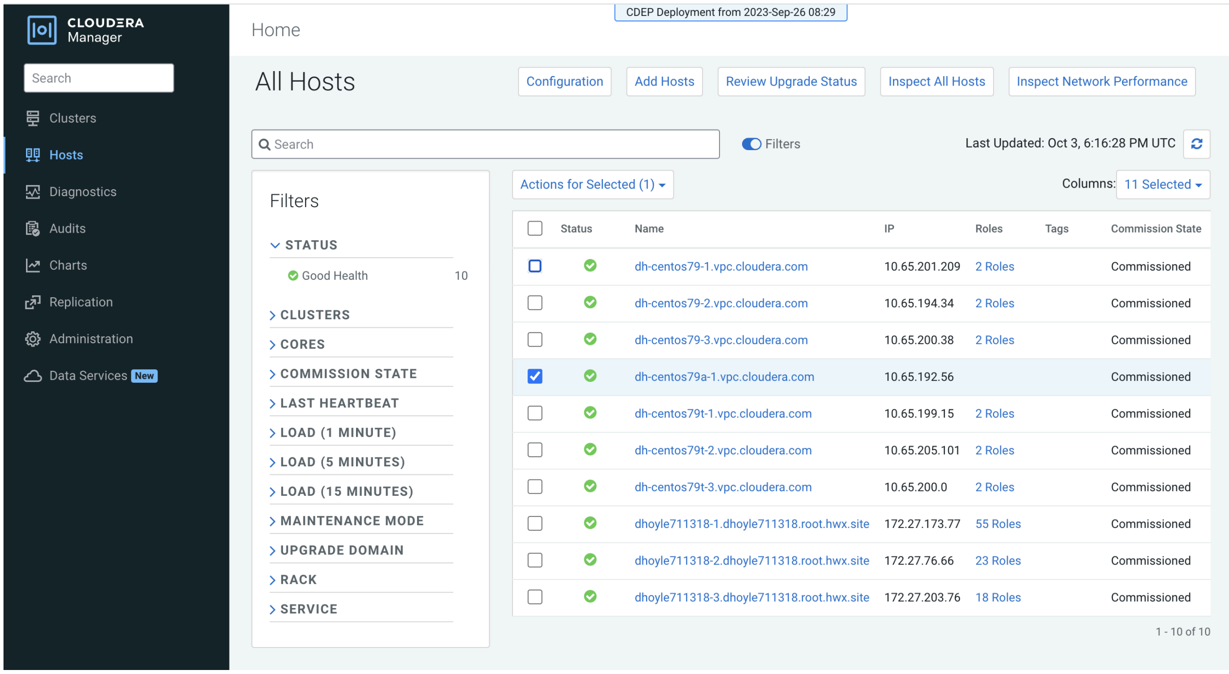
Add Hosts

The Add Hosts Wizard allows you to install the Cloudera Manager Agent on new hosts. You can either keep the new hosts available to be added to a cluster in the future, or you can add new hosts to an existing cluster

● **Add hosts to Cloudera Manager**
You can use these hosts later to create new clusters or expand existing clusters.

○ **Add hosts to Cluster**
152-b813t

3. In Cloudera Manager, click Hosts, then select the host you just added.



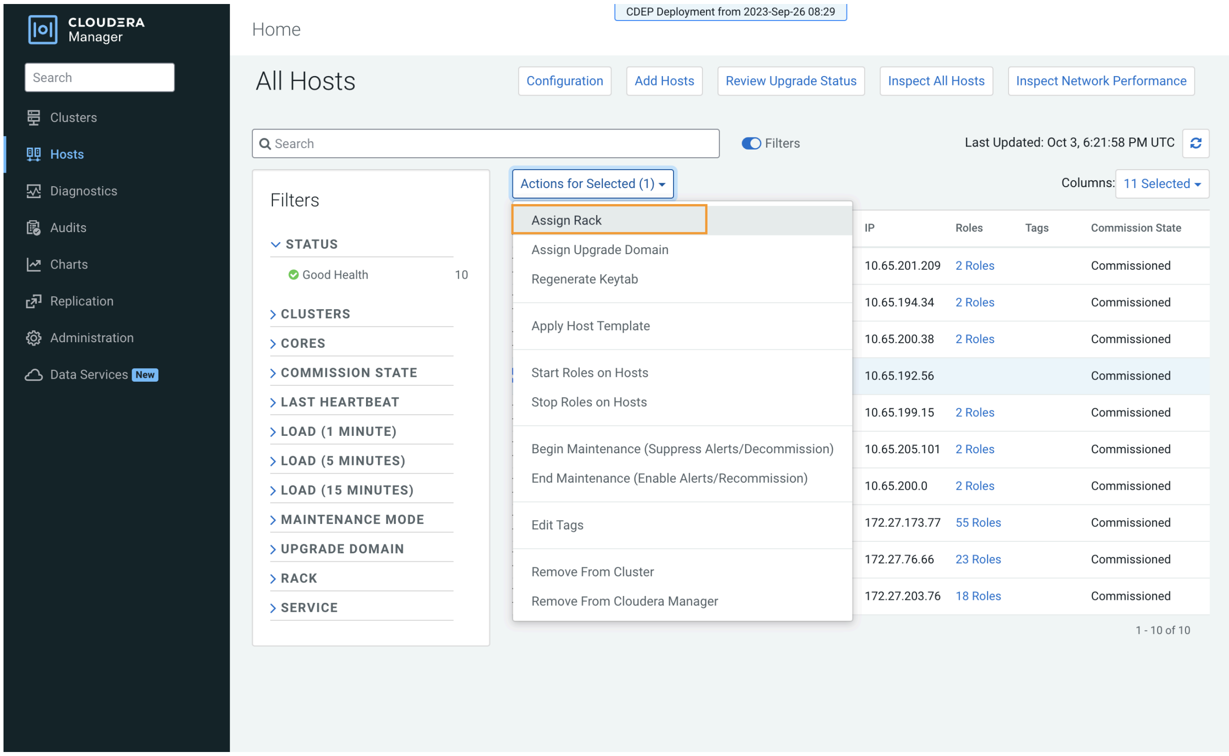
All Hosts

Last Updated: Oct 3, 6:16:28 PM UTC

□	Status	Name	IP	Roles	Tags	Commission State
□	✓	dh-centos79-1.vpc.cloudera.com	10.65.201.209	2 Roles		Commissioned
□	✓	dh-centos79-2.vpc.cloudera.com	10.65.194.34	2 Roles		Commissioned
□	✓	dh-centos79-3.vpc.cloudera.com	10.65.200.38	2 Roles		Commissioned
☑	✓	dh-centos79a-1.vpc.cloudera.com	10.65.192.56			Commissioned
□	✓	dh-centos79t-1.vpc.cloudera.com	10.65.199.15	2 Roles		Commissioned
□	✓	dh-centos79t-2.vpc.cloudera.com	10.65.205.101	2 Roles		Commissioned
□	✓	dh-centos79t-3.vpc.cloudera.com	10.65.200.0	2 Roles		Commissioned
□	✓	dhoyle711318-1.dhoyle711318.root.hwx.site	172.27.173.77	55 Roles		Commissioned
□	✓	dhoyle711318-2.dhoyle711318.root.hwx.site	172.27.76.66	23 Roles		Commissioned
□	✓	dhoyle711318-3.dhoyle711318.root.hwx.site	172.27.203.76	18 Roles		Commissioned

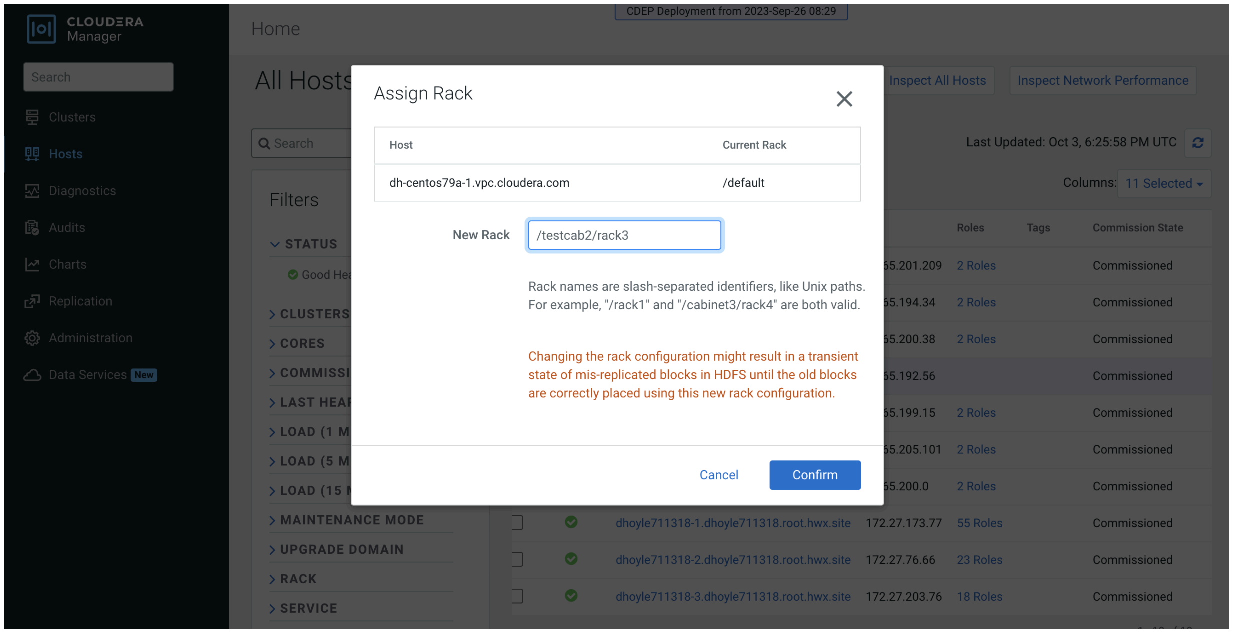
1 - 10 of 10

4. Click Actions for Selected, then click Assign Rack.



IP	Roles	Tags	Commission State
10.65.201.209	2 Roles		Commissioned
10.65.194.34	2 Roles		Commissioned
10.65.200.38	2 Roles		Commissioned
10.65.192.56			Commissioned
10.65.199.15	2 Roles		Commissioned
10.65.205.101	2 Roles		Commissioned
10.65.200.0	2 Roles		Commissioned
172.27.173.77	55 Roles		Commissioned
172.27.76.66	23 Roles		Commissioned
172.27.203.76	18 Roles		Commissioned

5. On the Assign Rack popup, enter the same rack name assigned to the other ECS cluster hosts in the New Rack box, then click Confirm.



Assign Rack

Host	Current Rack
dh-centos79a-1.vpc.cloudera.com	/default

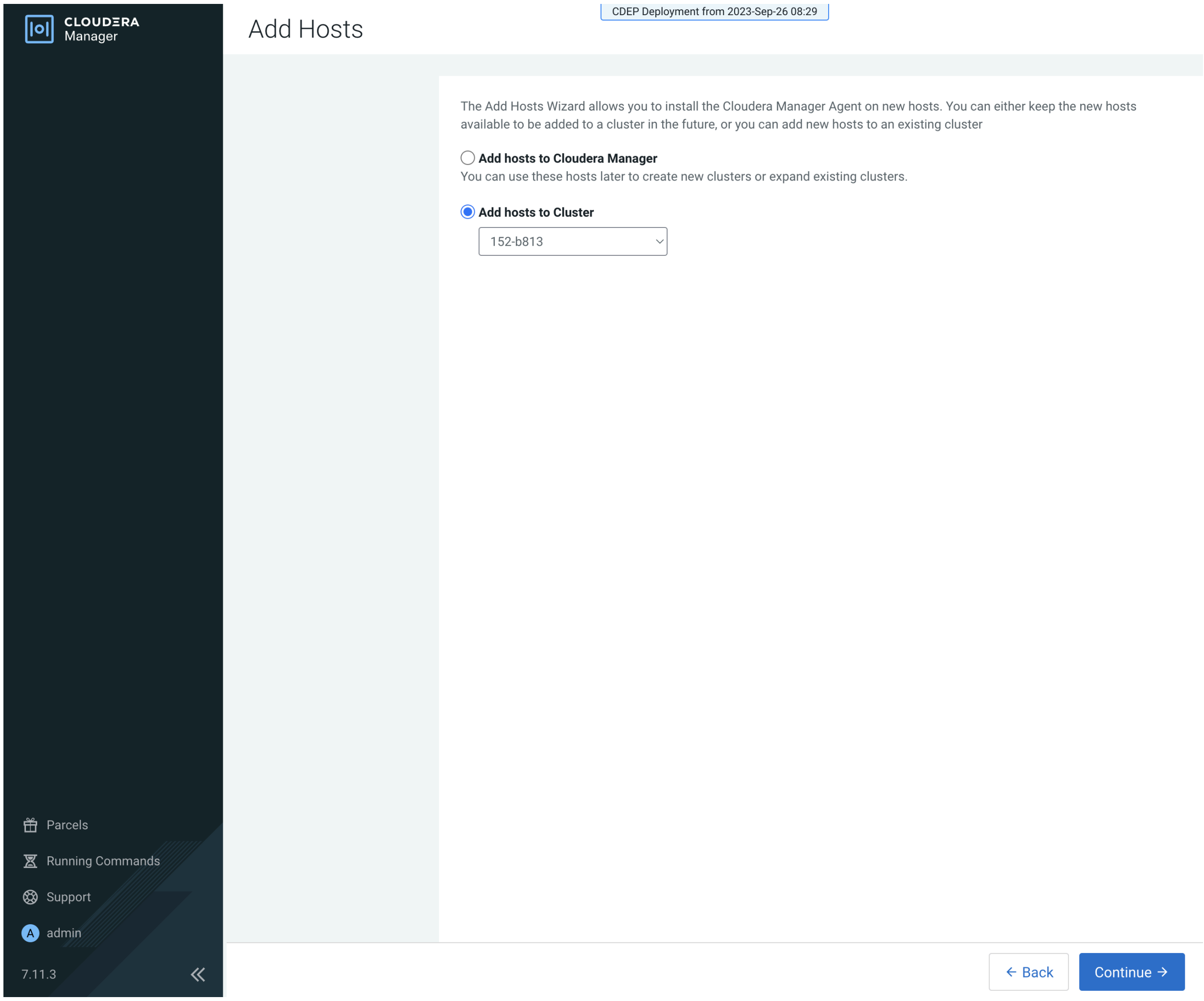
New Rack: /testcab2/rack3

Rack names are slash-separated identifiers, like Unix paths. For example, "/rack1" and "/cabinet3/rack4" are both valid.

Changing the rack configuration might result in a transient state of mis-replicated blocks in HDFS until the old blocks are correctly placed using this new rack configuration.

	IP	Roles	Tags	Commission State
dhoyle711318-1.dhoyle711318.root.hwx.site	172.27.173.77	55 Roles		Commissioned
dhoyle711318-2.dhoyle711318.root.hwx.site	172.27.76.66	23 Roles		Commissioned
dhoyle711318-3.dhoyle711318.root.hwx.site	172.27.203.76	18 Roles		Commissioned

6. In the ECS cluster, click Hosts, then click Add Hosts. Select Add hosts to Cluster, then click Continue.



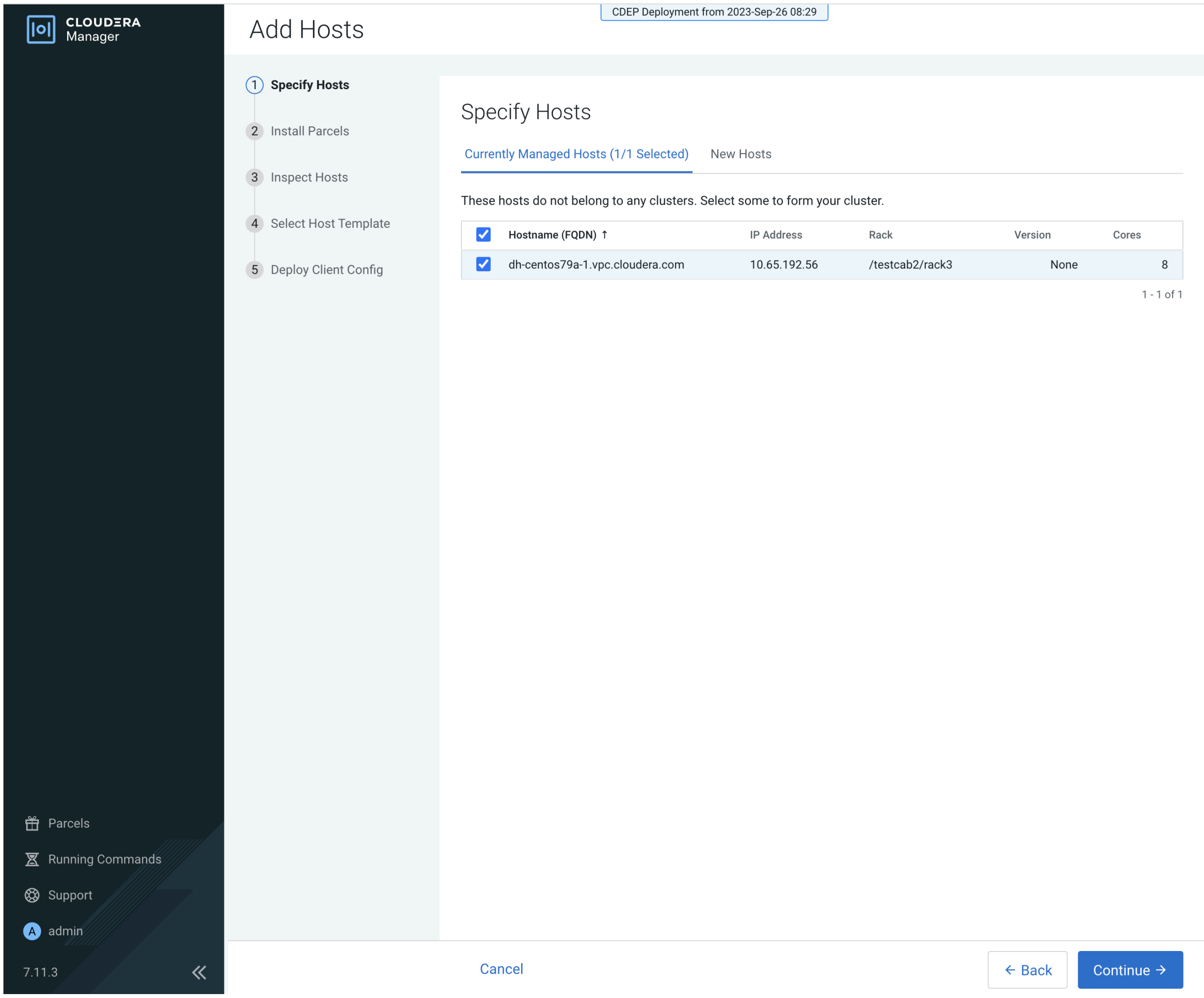
Add Hosts

The Add Hosts Wizard allows you to install the Cloudera Manager Agent on new hosts. You can either keep the new hosts available to be added to a cluster in the future, or you can add new hosts to an existing cluster

○ **Add hosts to Cloudera Manager**
You can use these hosts later to create new clusters or expand existing clusters.

● **Add hosts to Cluster**
152-b813

7. On the Specify Hosts page, select the new host, then click through the rest of the Add Hosts wizard.

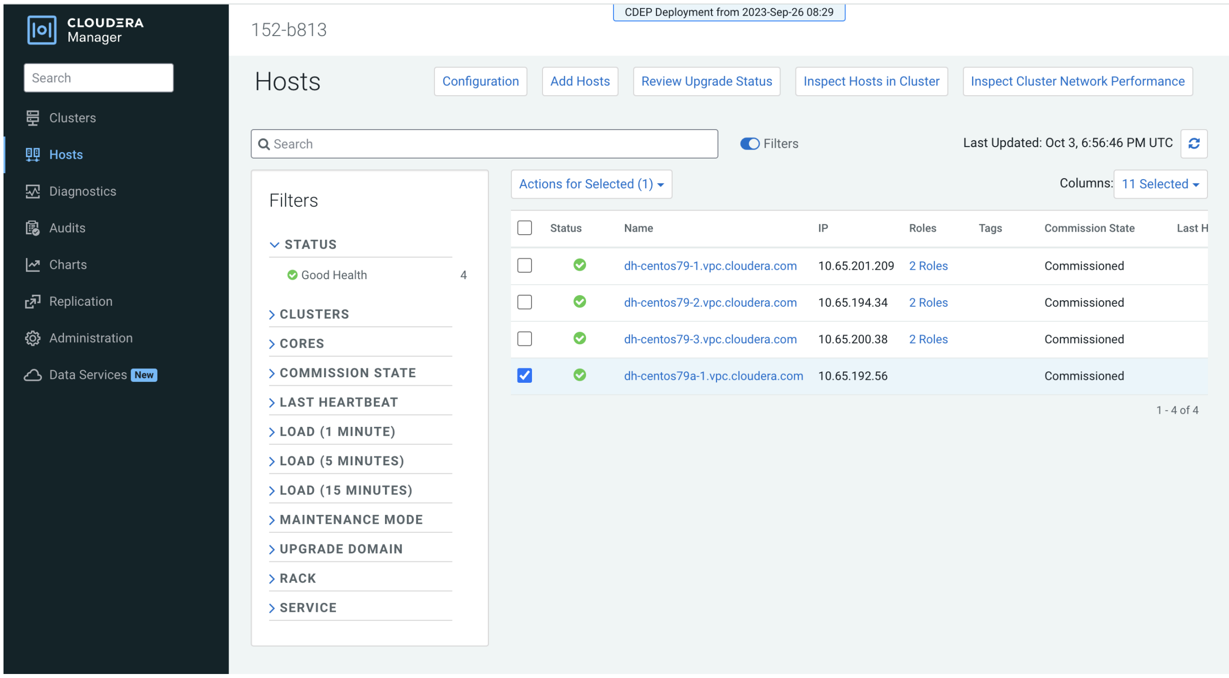


These hosts do not belong to any clusters. Select some to form your cluster.

☑	Hostname (FQDN) ↑	IP Address	Rack	Version	Cores
☑	dh-centos79a-1.vpc.cloudera.com	10.65.192.56	/testcab2/rack3	None	8

1 - 1 of 1

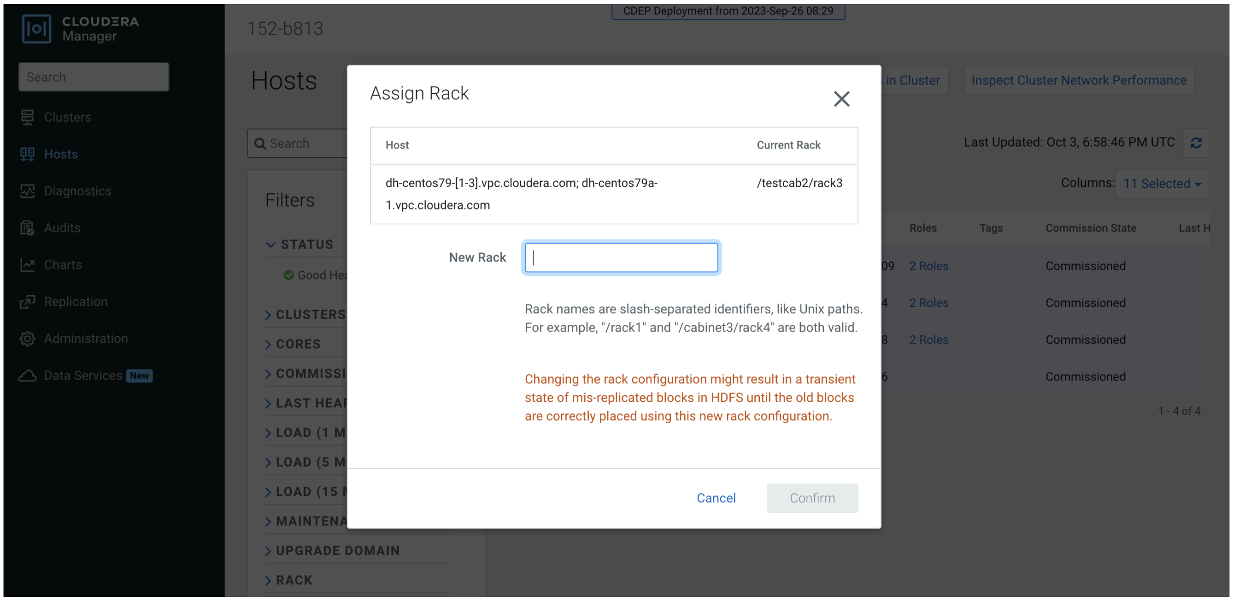
8. After the Add Host wizard is completed, the new host appears on the ECS cluster Hosts page.



□	Status	Name	IP	Roles	Tags	Commission State	Last H
□	✓	dh-centos79-1.vpc.cloudera.com	10.65.201.209	2 Roles		Commissioned	
□	✓	dh-centos79-2.vpc.cloudera.com	10.65.194.34	2 Roles		Commissioned	
□	✓	dh-centos79-3.vpc.cloudera.com	10.65.200.38	2 Roles		Commissioned	
☑	✓	dh-centos79a-1.vpc.cloudera.com	10.65.192.56			Commissioned	

1 - 4 of 4

9. You can use the Assign Rack popup to view the rack assignments for the ECS cluster hosts and confirm that the rack name for the new host matches the rack name of the other cluster hosts.



Assign Rack

Host	Current Rack
dh-centos79-[1-3].vpc.cloudera.com; dh-centos79a-1.vpc.cloudera.com	/testcab2/rack3

New Rack

Rack names are slash-separated identifiers, like Unix paths. For example, "/rack1" and "/cabinet3/rack4" are both valid.

Changing the rack configuration might result in a transient state of mis-replicated blocks in HDFS until the old blocks are correctly placed using this new rack configuration.

ECS unified time zone

You can synchronize the Embedded Container Service (ECS) cluster time zone with the Cloudera Manager Base time zone.

In CDP Private Cloud Data Services versions earlier than 1.5.2, containers running on an ECS Kubernetes cluster did not inherit the time zone settings from the Cloudera Manager Base host. In most cases, Kubernetes containers use Coordinated Universal Time (UTC) by default.

In Private Cloud Data Services 1.5.2 and higher versions, you can unify the time zone in the ECS cluster with the Cloudera Manager Base time zone. All workload pods in the ECS cluster run under the Cloudera Manager time zone, and workload logs on the ECS cluster are correlated with the Cloudera Manager Base logs. Timestamp-related SQL queries are also correlated.

- Unified time zone is enabled by default for new CDP Private Cloud Data Services 1.5.2+ installs.
- When upgrading from earlier versions of CDP Private Cloud Data Services to 1.5.2+, unified time zone is disabled by default to avoid affecting timestamp-sensitive logic.

You can enable or disable unified time zone using the following script in the ECS parcel:

```
bash /opt/cloudera/parcels/ECS/k8tz-webhook/configure-k8tz-webhook.sh -h
```

This script modifies the k8tz webhook settings.

Syntax:

configure-k8tz-webhook.sh [-i|-h]

Options:

- i – This option enables the unified time zone feature
- No options – To disable the unified time zone feature, run the configure-k8tz-webhook.sh script without any options.
- Use the -h flag to print Help information

To complete the process of enabling the unified time zone feature:

- Restart the workload pods where you want the Cloudera Manager Server timezone to be applied.

-OR-

- Initiate an ECS cluster rolling restart. This will inject the time zone information into all workload pods.

When the unified time zone feature is disabled, all running pods are not affected. To apply the new disabled setting so they run with the default UTC time zone, a pod restart or a rolling restart is required.

Adjusting the expiration time of ECS cluster certificates

The RKE Kubernetes, Vault, and ECS webhook certificate expiration times are set to one year by default. To avoid certificate expiration errors, you may want to extend the expiration times.

About this task

Note:

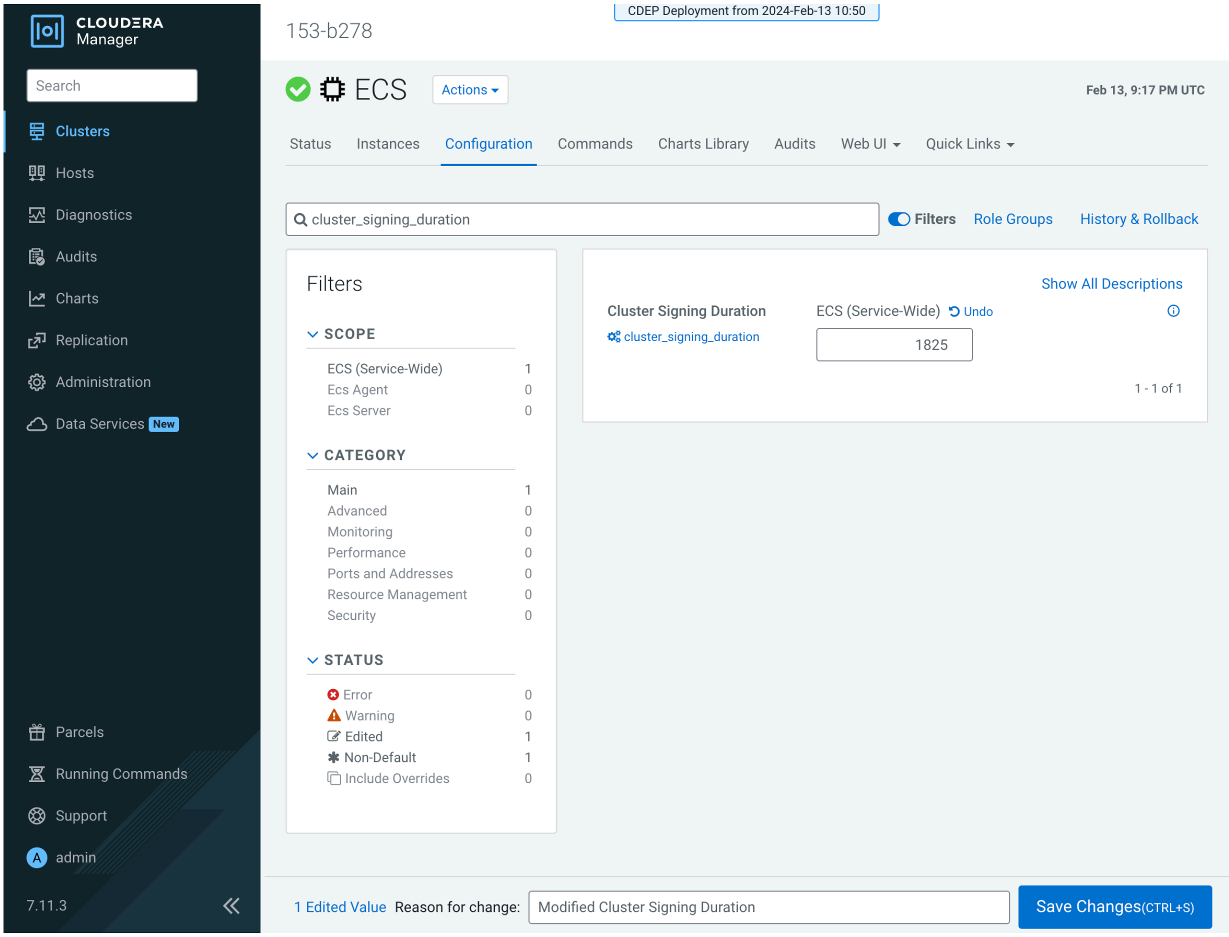
This topic only applies to internal certificates within ECS. It does not apply to the ingress controller certificate.

- These steps describe how to adjust the expiration time of internal cluster certificates in an existing ECS cluster.
- For a new cluster, if the nodes have been added to Cloudera Manager before creating the ECS cluster, you can edit the cluster_signing_duration configuration property in Cloudera Manager before creating the ECS cluster.

Adjusting the expiration time of the RKE Kubernetes cluster certificate

1. In Cloudera Manager, select the ECS cluster, then click ECS.
2. Click the Configuration tab, then use the Search box to locate the cluster_signing_duration configuration property.

3. The the cluster_signing_duration configuration property sets the expiration time for the RKE Kubernetes, Vault, and ECS webhook certificates, and is set to 1 year (365 days) by default. In the example below, the certificate expiration has been reset to 5 years (1825 days):



cluster_signing_duration

Cluster Signing Duration
cluster_signing_duration
ECS (Service-Wide) 1825

Reason for change: Modified Cluster Signing Duration

4. Click Save Changes.
5. On the ECS Cluster landing page, click Actions > Refresh Cluster.
6. After the Refresh is complete, click Actions > Rolling Restart.
7. After the restart is complete, the certificate expiration time is reset to the new value. You can also use the CLI to verify the new certificate expiration setting:

```
[root@host-1 ~]# cat /proc/47803/environ
CDH_PIG_HOME=/usr/lib/pigLD_LIBRARY_PATH=:/opt/cloudera/cm-agent/libCMF
_AGENT_ARGS=CDH_KAFKA_HOME=/usr/lib/kafka
CONF_DIR=/var/run/cloudera-scm-agent/process/1546342871-ecs-ECS_SERVERCDH_
PARQUET_HOME=/usr/lib/parquet
PARCELS_ROOT=/opt/cloudera/parcelsPARCEL_DIRNAMES=ECS-1.5.2-b866-ecs-1.5.2
-b866.p0.46395126LANG=en_US.UTF-8
CDH_HADOOP_BIN=/usr/bin/hadoopCDH_KMS_HOME=/usr/lib/hadoop-kmsCGROUP_GROUP
_CPU=CMF_PACKAGE_DIR=/opt/cloudera/cm-agent/service
ORACLE_HOME=/usr/share/oracle/instantclientMGMT_HOME=/opt/cloudera/cmINV
OCATION_ID=04c94a229a2b4684a95f8ec63783c81e
JSVC_HOME=/usr/libexec/bigtop-utilsCDH_IMPALA_HOME=/usr/lib/impalaKRB5_C
ONFIG=/etc/krb5.conf
CDH_YARN_HOME=/usr/lib/hadoop-yarnCLOUDERA_POSTGRESQL_JDBC_JAR=/opt/clo
udera/cm/lib/postgresql-42.5.1.jar
CDH_SOLR_HOME=/usr/lib/solrHIVE_DEFAULT_XML=/etc/hive/conf.dist/hive-defa
ult.xml
CLOUDERA_ORACLE_CONNECTOR_JAR=/usr/share/java/oracle-connector-java.jarC
GROUP_GROUP_BLKIO=system.slice/cloudera-scm-agent.service
```

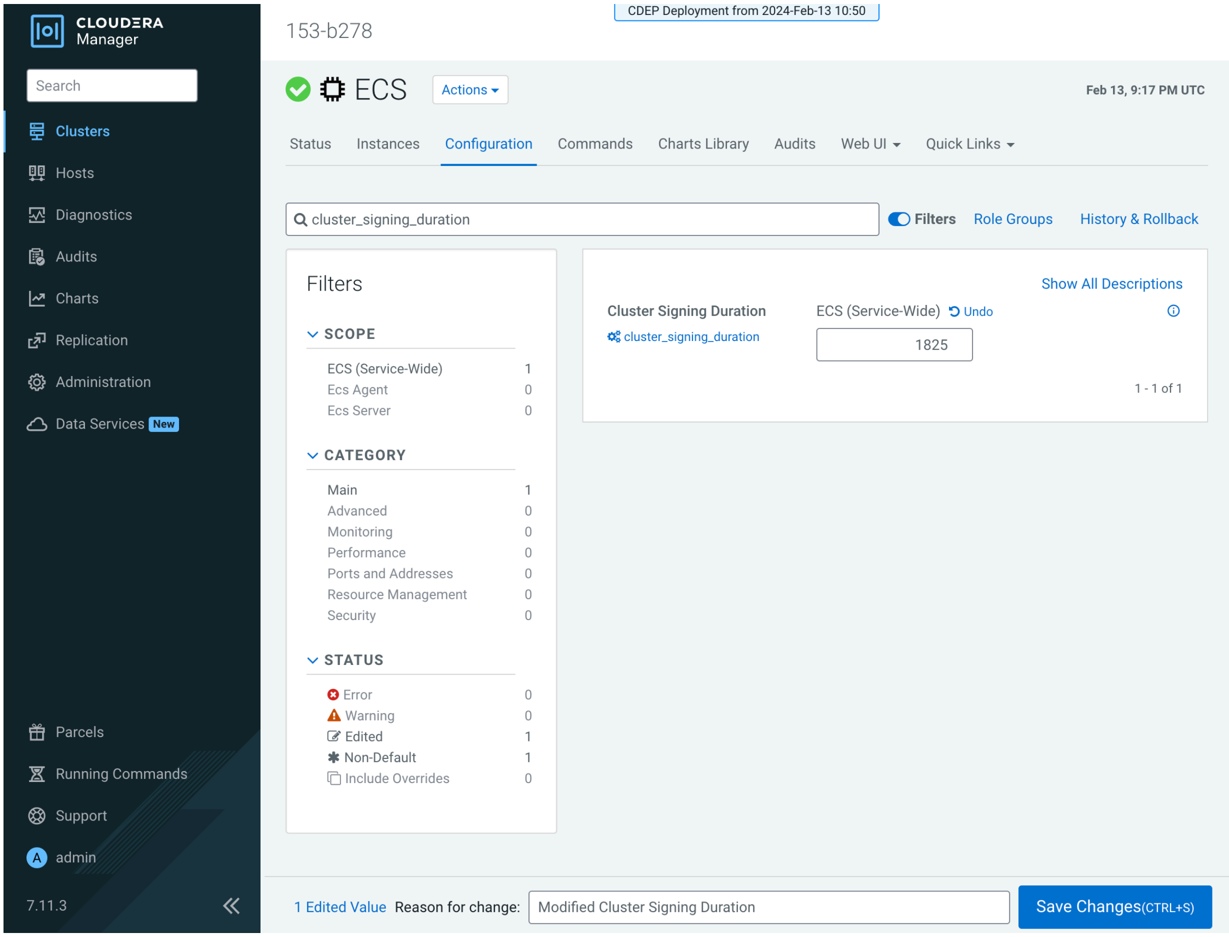
```
CGROUP_ROOT_BLKIO=/sys/fs/cgroup/blkioCGROUP_ROOT_CPU=/sys/fs/cgroup/cpu,c
puacctKEYTRUSTEE_KP_HOME=/usr/share/keytrustee-keyprovider
CLOUDERA_MYSQL_CONNECTOR_JAR=/usr/share/java/mysql-connector-java.jarCMF_
SERVER_ROOT=/opt/cloudera/cm
CGROUP_ROOT_CPUACCT=/sys/fs/cgroup/cpu,cpuacctCDH_FLUME_HOME=/usr/lib/f
lume-ng
CATTLE_NEW_SIGNED_CERT_EXPIRATION_DAYS=1825
<snip!>
```

```
[root@host-1 ~]# openssl x509 -in /var/lib/rancher/rke2/agent/serving-kubele
t.crt -noout -text
Certificate:
    Data:
        Version: 3 (0x2)
        Serial Number: 4005696761303552502 (0x379717fb376e51f6)
        Signature Algorithm: ecdsa-with-SHA256
        Issuer: CN = rke2-server-ca@1697759349
        Validity
            Not Before: Oct 19 23:49:09 2023 GMT
            Not After : Oct 17 23:49:10 2028 GMT
        Subject: CN = host-1.rke-1019.kcloud.cloudera.com
        Subject Public Key Info:
            Public Key Algorithm: id-ecPublicKey
                Public-Key: (256 bit)
                pub:
                    04:92:81:74:b8:fb:aa:6c:c5:9a:40:2c:5f:91:60:
                    35:16:9a:d5:41:b2:bf:d8:29:f4:ed:68:ed:cd:3d:
                    87:0e:59:db:27:26:c5:d8:a7:79:c7:23:8f:0b:71:
                    c2:f5:d4:36:fe:97:a9:b5:62:ee:9d:9b:6d:ed:25:
                    60:fd:26:3a:08
                ASN1 OID: prime256v1
                NIST CURVE: P-256
        X509v3 extensions:
            X509v3 Key Usage: critical
                Digital Signature, Key Encipherment
            X509v3 Extended Key Usage:
                TLS Web Server Authentication
            X509v3 Authority Key Identifier:
                keyid:26:8F:9F:A1:04:CE:2D:04:3A:03:11:87:9D:DF:5A:B7:5C:0
6:72:32
            X509v3 Subject Alternative Name:
                DNS:host-1.rke-1019.kcloud.cloudera.com, DNS:localhost, IP
 Address:127.0.0.1, IP Address:10.17.130.15
    Signature Algorithm: ecdsa-with-SHA256
         30:46:02:21:00:fc:5c:89:ab:99:a6:79:33:a9:28:da:a8:47:
         52:cf:1f:43:13:8c:06:2e:23:67:4c:b4:b0:d6:e3:f9:b6:ad:
         50:02:21:00:c7:64:aa:86:97:5a:f3:12:7e:3f:a2:f1:ab:93:
         17:6c:3a:37:34:01:ef:ba:7f:08:85:70:2c:c9:40:e0:30:f5
```

Adjusting the expiration time of the Vault certificate

1. In Cloudera Manager, select the ECS cluster, then click ECS.
2. Click the Configuration tab, then use the Search box to locate the cluster_signing_duration configuration property.

3. The the cluster_signing_duration configuration property sets the expiration time for the RKE Kubernetes, Vault, and ECS webhook certificates, and is set to 1 year (365 days) by default. In the example below, the certificate expiration has been reset to 5 years (1825 days):



cluster_signing_duration

Cluster Signing Duration
cluster_signing_duration
ECS (Service-Wide): 1825

Reason for change: Modified Cluster Signing Duration

4. Click Save Changes.
5. Copy the rotate-vault-cert.sh file to the ECS master host. Set JAVA_HOME if needed.
6. Run the following command:

   ./rotate-vault-cert.sh APP_DOMAIN
7. Unseal Vault.
8. Restart all of the pods in the CDP namespace by executing the following command:

```
for a in `kubectl get pod --no-headers=true -n cdp | grep -v -E 'Running|
Complete' | cut -d' ' -f1`; do kubectl delete pod $a -n cdp --force; done
```

9. If you are using a default self-signed ingress controller certificate, update the ingress controller certificate (follow the steps in the script output).
10. You can use the CLI to verify the new certificate expiration setting:

```
root       49076   48970  2 16:49 ?        00:00:10 kube-controller-mana
ger
--flex-volume-plugin-dir=/var/lib/kubelet/volumeplugins --terminated-pod-
gc-threshold=1000 --permit-port-sharing=true
--allocate-node-cidrs=true --authentication-kubeconfig=/var/lib/rancher/
rke2/server/cred/controller.kubeconfig
--authorization-kubeconfig=/var/lib/rancher/rke2/server/cred/controller.
kubeconfig --bind-address=127.0.0.1
--cluster-cidr=10.42.0.0/16 --cluster-signing-duration=43800h
```

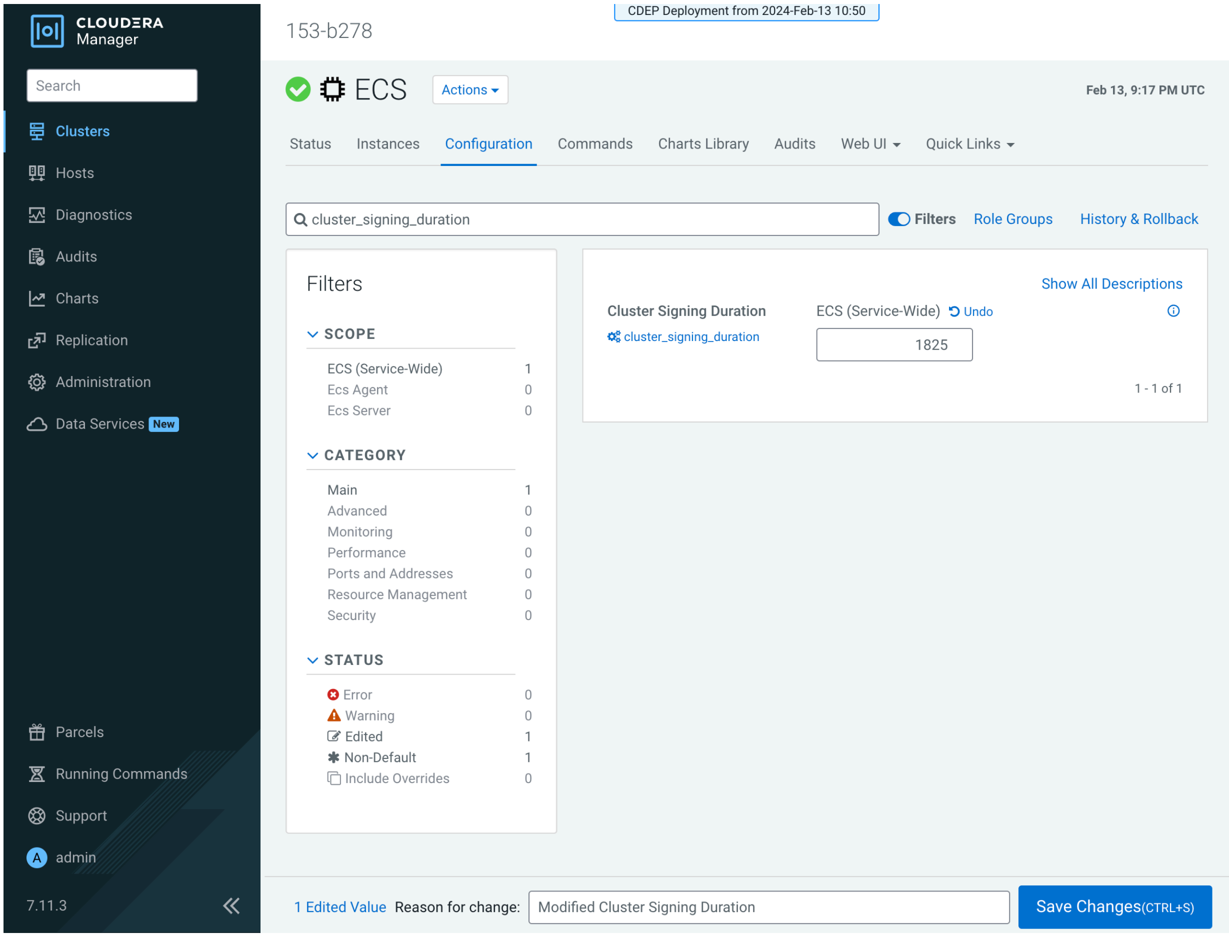
```
<snip!>
```

```
[root@host-1 ~]# openssl x509 -in vault.pem -noout -text
Certificate:
    Data:
        Version: 3 (0x2)
        Serial Number:
            db:b7:a7:c3:79:86:4c:54:e8:97:49:bf:99:3d:df:a9
        Signature Algorithm: ecdsa-with-SHA256
        Issuer: CN = rke2-server-ca@1697759349
        Validity
           Not Before: Oct 19 23:46:38 2023 GMT
            Not After : Oct 17 23:46:38 2028 GMT
        Subject: O = system:nodes, CN = "system:node:vault.vault-system.svc
;"
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                RSA Public-Key: (2048 bit)
                Modulus:
                    00:94:93:2e:9d:5c:01:5a:95:46:b2:9d:aa:23:c4:
                    4e:0f:92:07:7e:0e:3a:21:7d:ef:95:e8:09:d3:88:
                    38:ac:e9:9f:c2:36:37:04:56:43:87:3a:6f:34:08:
                    09:8f:3f:df:31:79:d6:12:db:78:f6:1c:9b:0e:c2:
                    d0:f5:25:50:86:37:d5:ff:f7:a0:82:6f:55:d1:ff:
                    03:54:f8:ce:8b:02:87:2d:af:3f:71:f8:c4:a9:f0:
                    24:50:7b:07:70:3d:7a:be:9d:41:f0:15:2f:56:c3:
                    d3:0d:1a:e1:87:8e:69:89:ff:bf:1b:f2:84:87:6c:
                    5e:f9:13:8b:2c:5c:de:64:9e:ae:de:6a:f0:7c:ae:
                    d9:01:41:aa:39:00:b3:2d:4f:5c:db:fb:2b:80:31:
                    88:b5:40:24:e1:06:08:c4:ad:82:70:a1:9e:4c:3e:
                    00:0d:61:d9:1a:5c:c7:11:a7:79:68:66:34:b2:c2:
                    e9:63:a8:5d:d1:13:be:e6:f1:8f:03:87:3d:be:eb:
                    b7:ce:a5:eb:56:81:37:5b:9d:ce:82:34:15:99:16:
                    4c:65:20:d9:df:e6:63:56:c2:49:79:e8:66:ce:c1:
                    01:9d:87:a2:ba:02:c0:7c:2b:e5:37:30:c5:23:bd:
                    87:a1:c8:2b:a9:49:be:67:31:22:8d:a4:68:f9:bd:
                    be:23
                Exponent: 65537 (0x10001)
        X509v3 extensions:
            X509v3 Key Usage: critical
                Digital Signature, Key Encipherment
            X509v3 Extended Key Usage:
                TLS Web Server Authentication
            X509v3 Basic Constraints: critical
                CA:FALSE
            X509v3 Authority Key Identifier:
                keyid:26:8F:9F:A1:04:CE:2D:04:3A:03:11:87:9D:DF:5A:B7:5C:0
6:72:32
            X509v3 Subject Alternative Name:
                DNS:vault, DNS:vault.vault-system, DNS:vault.vault-system.
svc, DNS:vault.vault-system.svc.cluster.local, DNS:vault.localhost.localdoma
in, DNS:*.apps.host-1.rke-1019.kcloud.cloudera.com, IP Address:127.0.0.1
    Signature Algorithm: ecdsa-with-SHA256
         30:46:02:21:00:d9:5e:38:fc:31:9b:5a:eb:fc:7d:c2:8f:b3:
         54:5e:28:f0:8f:00:eb:36:65:9f:d3:70:ae:a2:79:77:ee:b5:
         f7:02:21:00:f4:e8:6f:c9:bd:bb:92:9d:63:81:69:55:67:8b:
         8a:f3:a4:5d:c1:67:66:b0:40:ff:22:a6:c3:6f:4f:8e:b2:8e
```

Adjusting the expiration time of the ECS webhook certificate

1. In Cloudera Manager, select the ECS cluster, then click ECS.
2. Click the Configuration tab, then use the Search box to locate the cluster_signing_duration configuration property.

3. The the cluster_signing_duration configuration property sets the expiration time for the RKE Kubernetes, Vault, and ECS webhook certificates, and is set to 1 year (365 days) by default. In the example below, the certificate expiration has been reset to 5 years (1825 days):



cluster_signing_duration

Filters

SCOPE

ECS (Service-Wide)	1
Ecs Agent	0
Ecs Server	0

CATEGORY

Main	1
Advanced	0
Monitoring	0
Performance	0
Ports and Addresses	0
Resource Management	0
Security	0

STATUS

Error	0
Warning	0
Edited	1
Non-Default	1
Include Overrides	0

Cluster Signing Duration
cluster_signing_duration
ECS (Service-Wide) 1825

1 Edited Value Reason for change: Modified Cluster Signing Duration

4. Click Save Changes.
5. Copy the rotate-webhook-cert.sh file to the ECS master host.
6. Run the following command:

   ./rotate-webhook-cert.sh APP_DOMAIN
7. Check for any pods in the Pending state whose status shows that they cannot tolerate the node-role.kubernetes.io/control-plane toleration. Restart those pods.
8. You can use the CLI to verify the new certificate expiration setting:

```
root       49076   48970  2 16:49 ?        00:00:10 kube-controller-mana
ger
--flex-volume-plugin-dir=/var/lib/kubelet/volumeplugins --terminated-pod-
gc-threshold=1000 --permit-port-sharing=true
--allocate-node-cidrs=true --authentication-kubeconfig=/var/lib/rancher/
rke2/server/cred/controller.kubeconfig
--authorization-kubeconfig=/var/lib/rancher/rke2/server/cred/controller.
kubeconfig --bind-address=127.0.0.1
--cluster-cidr=10.42.0.0/16 --cluster-signing-duration=43800h
<snip!>
```

```
[root@host-1 ~]# openssl x509 -in ecs-tolerations-webhook-cert.pem -noout -t
ext
Certificate:
    Data:
        Version: 3 (0x2)
        Serial Number:
            a5:31:94:f4:84:bb:3b:a2:a4:63:8d:ec:de:b5:37:53
        Signature Algorithm: ecdsa-with-SHA256
        Issuer: CN = rke2-server-ca@1697759349
        Validity
            Not Before: Oct 19 23:45:48 2023 GMT
            Not After : Oct 17 23:45:48 2028 GMT
        Subject: O = system:nodes, CN = "system:node:ecs-tolerations-webhook
.ecs-webhooks.svc;"
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
                RSA Public-Key: (2048 bit)
                Modulus:
                    00:cc:12:e1:54:b8:aa:42:94:aa:11:a5:f7:35:0e:
                    0c:de:76:5b:d5:c6:c1:34:0b:b8:b7:2b:15:08:1d:
                    02:44:0f:2e:e1:17:dc:73:6a:e4:6c:df:5b:ac:43:
                    97:2e:34:73:f7:c9:6f:cf:c2:a8:52:79:b1:89:ea:
                    51:22:e1:41:b8:6a:ba:fd:22:a2:bf:a2:46:a4:8e:
                    f5:c6:2d:05:c3:a5:1d:6b:60:da:e8:40:a5:e1:e1:
                    5a:55:0e:94:2d:91:dd:71:d1:e9:aa:27:5d:e6:fc:
                    ea:5f:ea:c6:8e:52:71:27:ce:c2:a7:1b:10:ca:db:
                    db:27:c8:46:6d:14:d1:d0:b3:f5:ab:74:a9:63:8b:
                    71:83:31:eb:ad:87:1b:3b:8d:ff:ce:d0:7f:d1:1b:
```

Rotate internal ECS certificates

Perform the below steps to rotate the control plane certificates for vault, tolerations webhook, embedded database, and ingress certificate, if the cluster is using the default certificate for ingress:

1. In Cloudera Manager UI, select the ECS cluster, then click ECS Service.
2. Under Actions, click Rotate Internal ECS Certificates.
3. A prompt appears requesting confirmation regarding the certificates that will be rotated as part of this command. Proceed by clicking Rotate Internal ECS Certificates.
4. The command will rotate certificates for vault, ingress controller, and restart related pods.

   Note: You will notice some additional pods getting restarted as well, this is done by the cdp-reloader service, which restarts certain pods which have annotations regarding the kubernetes secrets and/or configmaps the pod utilizes.
5. After the command executes, you must wait for all control plane pods to run again (same state prior to running the command) and then proceed with your regular use.

Configuring multiple Base clusters with one ECS cluster

You can configure one Embedded Container Service (ECS) cluster to work with multiple CDP Private Cloud Base clusters managed by separate instances of Cloudera Manager. In order to do this you must first create a combined truststore .pem file that contains the ECS Control Plane truststore .pem file appended with the certificate files of each of the CDP Private Cloud Base clusters.

About this task

Use the following steps to configure one ECS cluster to work with multiple CDP Private Cloud Base clusters:

1. Append the ECS Control Plane truststore .pem file with the certificate files from the additional CDP Private Cloud Base clusters.
2. Register an ECS environment with each of the additional CDP Private Cloud Base clusters.
3. Create data services within each environment.

Step 1: Append the ECS Control Plane truststore .pem file with the certificate files from the Base clusters

1. On the ECS Control Plane, run the following kubectl command to get the contents of the configmap:

```
kubectl get configmap cdp-private-installer-truststore -n cdp -o yaml >
cdp-private-installer-truststore.yaml
```

2. Copy the truststorePEM content, decode it, and store it in a file. For example:

```
echo LS0tLS1CRUdJTiBDRVJUSUZJQ0FURS0tLS0tCk1JSURhakNDQWxJQ0NRRG5iNnhmK0d
QR1l6QU5CZ2txaGtpRzl3MEJBUXNGQURCWk1Rc3dDUV
lEVlFRR0V3SlYKVXpFTE1Ba0dBMVVFQ0F3Q1EwRXhDekFKQmdOVkJBY01BbE5ETVEwd0N3WU
RWUVFLREFSRFRFUlNNUXd3Q2dZRApWUVFMREFOQ1RGS
XhFekFSQmdOVkJBTU1DaW91YUhkNExuTnBkR1V3SGhjTk1qTXhNVEV3TVRRME1qUXdXaGNOC
k1qUXhNVEE1TVRRME1qUXdXakFWTVJNd0VRWURWUVFE
REFvcUxtaDNlQzV6YVhSbE1JSUJvakFOQmdrcWhraUcKOXcwQkFRRUZBQU9DQVk4QU1JSUJp
Z0tDQVlFQS9lZkJtK05IQTdWUTF1M05qK3ZoRGFRV0p
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0M2cWh0L1JwbEx3QTB6ZVlYSDhkNjl2Ykw4T1EKemREeXZlcmptRXZjS3F1bGo4NU1CSTZwc
VRGb21QcEp5VVlxS0cwN2U1WDN0QmZiVzk2QXdYT1BT
SFd0QlpndwpyeTVFbzRxWVRJMGZmYlFCS3ZIVElzYTd3T0xmRzAvK3J3SURBUUFCb3pzd09U
QUxCZ05WSFE4RUJBTUNREF3CkV3WURWUjBsQkF3d0N
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```

```
jk5NTRxL3RtCkh4MXpVR0VURkZaZHdkb0dDMk14Ui9WdU9wbExza2hEc0ZJZmpaZC81clVrL
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SFNzQ3FRTFk4WGZQM0d3WHgrTmVUY09vTEQycXYvYW1kMnY1dlVtdXpONzErZjR3bXVvbwpa
Z1JiYk9OSkMvdzVzV3MvWVRaODd1M1JNUWExd2gvckl
YMk1QMzNTMG1SeHJkSXlpeGMxamF6ZTYxWmRUUnk5Ck9NQ2RmZEpGNFE1RndmODdWSWpYZXd
PemdQVnFJVGVNVW1vcy9HR0p0UT09Ci0tLS0tRU5EIE
NFUlRJRklDQVRFLS0tLS0= | base64 -d > cdp-private-installer-truststore.pem
```

3. Obtain the truststore .pem file from the first additional Cloudera Manager host from /var/lib/cloudera-scm-agent/agent-cert/cm-auto-global_cacerts.pem or /opt/cloudera/CMCA/trust-store/cm-auto-global_cacerts.pem and copy the contents.
4. Append the cdp-private-installer-truststore.pem file created previously with the contents of the Cloudera Manager .pem file.
5. Repeat the previous two steps for all additional Cloudera Manager hosts you would like to register environments with.
6. Log in to the ECS cluster Management Console and click Administration > CA Certificates. Select Datalake in the CA Certificate Type drop-down, click Choose File, then select the appended cdp-private-installer-truststore.pem file and click Upload. Click Save to save your changes.

   You can also use the following CLI commands to upload the cdp-private-installer-truststore.pem file and update the global truststore with the encoded certificate file content:

   ```
   cat cdp-private-installer-truststore.pem | base64
   cdp environments --set-environment-setting --settings truststorePEM=<base6
   4 encoded CM cert> --no-verify-tls
   ```

Step 2: Register an ECS environment with each of the additional Base clusters

1. Log in to the ECS cluster Management Console and Register an environment for the first additional Base cluster using the applicable Cloudera Manager URL and credentials.
2. Repeat the previous step for the rest of the additional Base clusters.

Step 3: Create data services within each environment

Refer to the following topics to create the data services of your choice in each environment:

- Adding a Cloudera Data Engineering service
- Activate ECS environments (CDW)
- Provision an ML Workspace

GPU node labeling on ECS

You can use NVIDIA Feature Discovery to generate labels for the set of GPUs available on ECS nodes. You can use these node labels to assign workloads to specific GPU devices. This feature is enabled by default on ECS.

Using GPU node labeling on ECS

Information about using GPU node labeling is available on the NVIDIA GPU feature discovery page.

Known Issues and Limitations

- GPU node labeling is only supported for GPU cards manufactured by NVIDIA.
- If an ECS node has multiple GPUs, not all of the GPUs will be labeled. The last GPU as per lspci will be labeled.
- If an ECS node is provisioned from a provisioner with virtual GPUs (AWS, Azure, etc.) the nodes will not be labeled with the GPU information.