

CDP Private Cloud Data Services 1.5.1

# Upgrading CDP Private Cloud Data Services on the OpenShift Container Platform

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The Cloudera logo is displayed in a bold, orange, sans-serif font. The word "CLOUDERA" is written in all caps, with a stylized 'E' that has a horizontal bar extending to the right.

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

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## Update from 1.4.1 or 1.5.0 to 1.5.1 (OCP)

You can update your existing CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1 without performing an uninstall. After the update is complete, you may need to upgrade the underlying OpenShift Container Platform. See the [Software Support Matrix for OpenShift](#) for more information about supported OCP versions.

### About this task

If you are upgrading the OCP version to **4.10.x or higher**, while the CDE service is enabled, it fails to launch the Jobs page in the old CDE virtual cluster. Hence, you must back up CDE jobs in the CDE virtual cluster, and then delete the CDE service and CDE virtual cluster. Restore it after the upgrade. For more information about backup and restore CDE jobs, see [Backing up and restoring CDE jobs](#).

### Before you begin

- Review the [Software Support Matrix for OpenShift](#).
- As of CDP Private Cloud Data Services 1.5.1, external metadata databases are no longer supported. If you are upgrading from CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1, and you were previously using an external Control Plane database, you must run the following psql commands to create the required databases. You should also ensure that the three new databases are owned by the common database users known by the control plane.

```
CREATE DATABASE db-dss-app;  
CREATE DATABASE db-cadence;  
CREATE DATABASE db-cadence-visibility;
```

- If you are upgrading from CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1, and you were previously using an external Control Plane database, you must regenerate the DB certificate with SAN before upgrading to CDP Private Cloud Data Services 1.5.1. For more information, see [Pre-upgrade - Regenerate external DB cert as SAN \(if applicable\)](#) on page 12.
- Make a backup of the OpenShift routes before upgrading to 1.5.1.

Ensure that you have the following before you update:

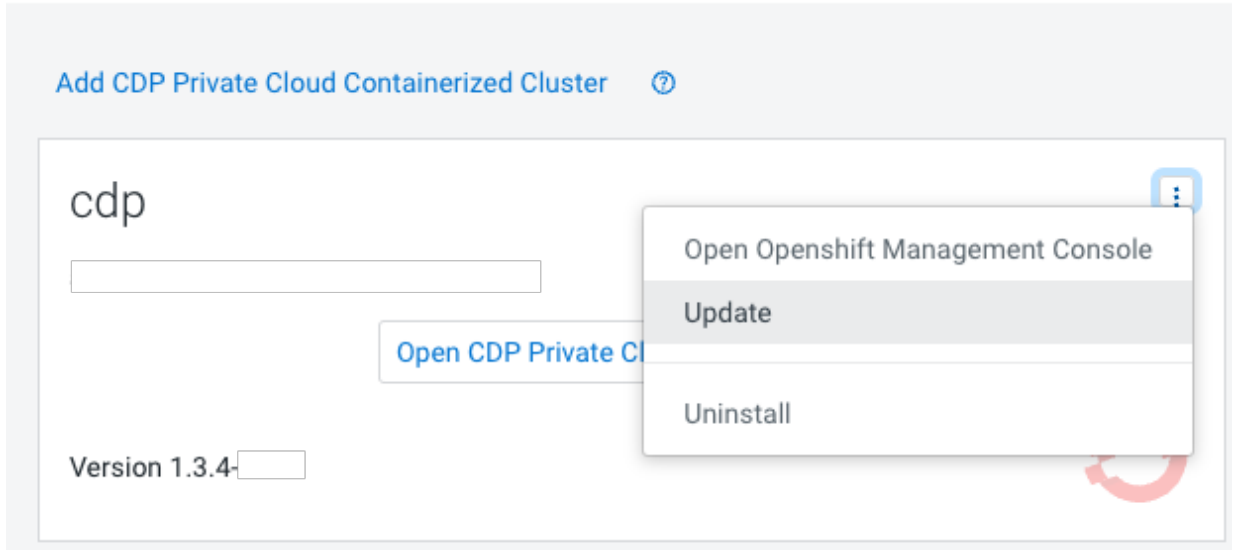
- Ensure that this kubeconfig has permissions to create Kubernetes namespaces.
- Back up all the external databases used by CDP Private Cloud Data Services.
- One or more environments registered in CDP Private Cloud Data Services.
- One of the registered environment has one or more Cloudera Data Warehouse (CDW) or Cloudera Machine Learning (CML) experience workspaces.
- Kubeconfig file for the OCP cluster
- Access to the Cloudera Private Cloud repositories ([archive.cloudera.com](https://archive.cloudera.com))
- Administrator access to OCP and Privileged access to your external Vault

**Procedure**

1.

In Cloudera Manager, navigate to CDP Private Cloud Data Services and click . Click Update.

# CDP Private Cloud Data Services



- On the Getting Started page, you can select the Install method - Air Gapped or Internet and proceed.

### Internet install method

Update Private Cloud Data Services (cdp)

Getting Started

This wizard provides step-by-step guidance for updating CDP Private Cloud Data Services.

Visit the [CDP Private Cloud](#) documentation for more information.

Current Version  
1.3.4

Install Method  
 Internet    Air Gapped

1. Select Repository

Please ensure all the Data Lake clusters are running Cloudera Runtime 7.1.6 or greater

You are about to update CDP Private Cloud Data Services to version 1.4.0. This is a **minor version** update. Please make sure you have backed up all the external databases.

### Air Gapped install method

Update Private Cloud Data Services (cdp)

Getting Started

This wizard provides step-by-step guidance for updating CDP Private Cloud Data Services.

Visit the [CDP Private Cloud](#) documentation for more information.

Current Version  
1.3.4

Install Method  
 Internet    Air Gapped

Installing via a local mirror with an http server. You will need to setup a full mirror of Cloudera's repositories via a temporary http server within the perimeter network of all hosts.

- Download everything under `https://archive.cloudera.com/p/cdp-pvc-ds/latest`

```
$ wget -l 0 --recursive --no-parent -e robots=off -nH --cut-dirs=2 --reject="index.html*" -t 10 https://<username>:<password>@archive.cloudera.com/p/cdp-pvc-ds/latest
```

- Modify the file `manifest.json` inside the downloaded directory, change `"http_url": "..."` to `"http_url": "http://your_local_repo/cdp-pvc-ds/latest"`
- Mirror the downloaded directory to your local http server, e.g. `http://your_local_repo/cdp-pvc-ds/latest`
- Add `http://your_local_repo/cdp-pvc-ds/latest` to your `Custom Repository` settings and select it from the dropdown below.

5. Select Repository

Please ensure all the Data Lake clusters are running Cloudera Runtime 7.1.6 or greater

You are about to update CDP Private Cloud Data Services to version 1.4.0. This is a **minor version** update. Please make sure you have backed up all the external databases.

Click Continue.

3. On the Collect Information page, upload a Kubernetes configuration (kubeconfig) file from your existing environment. You can obtain this file from your OpenShift Container Platform administrator. Click Continue.

## Update Private Cloud Data Services (cdp)

Getting Started

**2 Collect Information**

3 Update Progress

4 Summary

### Collect Information

#### Kubernetes Environment

#### Kubernetes Configuration

[Choose File](#)

#### Kubernetes Cluster

4. On the Update Progress page, you can see the progress of your update. Click Continue.

### Update Private Cloud Data Services (cdp)

- ✔ Getting Started
- ✔ Collect Information
- 3 Update Progress
- 4 Summary

#### Update Progress

Updating the CDP Private Cloud Management Console in the namespace cdp.

- ✔ Downloading the CDP Private Cloud update utility.
- ✔ Extracting the CDP Private Cloud update utility.
- ✔ Configuring and updating the helm charts.
- ✔ Waiting for all the pods to start or timeout.

▼ Show Logs

cdp-release-dps-gateway-1.0-cf7db56b-mt7tg	3/3	Running	0	3m48s
cdp-release-dwx-server-7587f9796f-h5555	2/2	Running	0	3m28s
cdp-release-dwx-ui-694757cc48-m2v1b	2/2	Running	0	3m20s
cdp-release-dwx-ui-694757cc48-mtnv1	2/2	Running	0	3m27s
cdp-release-grafana-59fdd998fd-679b2	3/3	Running	0	3m19s
cdp-release-logger-alert-receiver-86d67cdfb-hhgfs	2/2	Running	0	3m18s



#### Important:

During the "Upgrade Control Plane" step of the CDP upgrade process, the grafana pod can get stuck in the terminating state. This usually means that all other Control Plane pods are in the running state, but for Grafana, there is one pod that is in running state and there is one pod that is stuck in terminating state. The terminating pod has the following message:

```
containers with incomplete status: [multilog-init grafana-sc-datasources]
```

If you search for the terminating pod id in the kubelet log on the host, the following error message can be found:

```
E0531 2209 kuberuntime_sandbox.go:70] CreatePodSandbox for pod "<pod id>" failed: rpc error: code = Unknown desc = error reading container (probably exited) json message: EOF
```

If there is a grafana pod stuck in terminating state, run the following command on the ECS Server host:

```
<grafana-pod-id> --force --grace-period=0
```

5. After the update is complete, the Summary page appears. You can now Launch CDP Private Cloud from here.

### Update Private Cloud Data Services (cdp)

- ✔ Getting Started
- ✔ Collect Information
- ✔ Update Progress
- 4 Summary

#### Summary

CDP Private Cloud has been updated. Click Launch CDP Private Cloud to proceed.

Launch CDP Private Cloud

Or you can navigate to the CDP Private Cloud Data Services page and click Open CDP Private Cloud Data Services.

CDP Private Cloud Data Services opens up in a new window.



6. After the update is complete, delete the old CDE service and the underlying virtual clusters. You may also need to upgrade the underlying OpenShift Container Platform. See the [Software Support Matrix for OpenShift](#) for more information about supported OCP versions.

## Pre-upgrade - Preparing for CDP Private Cloud Data Services update for CDE

Upgrading the OpenShift Container Platform (OCP) version while CDE service is enabled, can cause database corruption in the embedded MySQL database used for CDE. Follow the below steps before starting the OCP version upgrade.

### Procedure

1. Stop running jobs and pause scheduled workloads
  - a) Kill all the running Spark jobs in the CDE virtual clusters under all CDE services or wait for them to complete.
  - b) Pause all Airflow jobs and scheduled Spark jobs.
2. Identifying the CDE Namespace
  - a) Navigate to the Cloudera Data Engineering Overview page by clicking the Data Engineering tile in the Cloudera Data Platform (CDP) management console.
  - b) In the CDE Services column, click Service Details for the CDE service.
  - c) Note the Cluster ID shown in the page. For example, if the Cluster ID is *cluster-abcd1234*, then the CDE Namespace is *dex-base-abcd1234*.
  - d) Use this CDE Namespace (in the above example, it is *dex-base-abcd1234*) in the following instructions to run kubernetes commands.
3. Scale down CDE embedded database

Access the OpenShift cluster with OpenShift CLI or Kubernetes CLI, and scale down the CDE embedded database statefulset to 0 with the following command:

OpenShift CLI

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 0
```

Kubernetes CLI

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 0
```

## Pre-upgrade - Upgrading CDE Service with Endpoint Stability

You can seamlessly upgrade an old Cloudera Data Engineering (CDE) service to a new version with endpoint stability. This enables you to access the CDE service of the new version with the previous endpoint. Thus, you can use the existing endpoints without changing configurations at the application level.

The CDE service endpoint migration process lets you migrate your resources, jobs, job run history, spark jobs' logs and event logs from your old cluster to the new cluster.

### Prerequisites for upgrading CDE Service with endpoint stability

You must first download the docker image and create the `cde-upgrade-util.properties` file to back up the Cloudera Data Engineering (CDE) service.

## Procedure

1. Download the [dex-upgrade-utils](#) docker image tarball. The file naming convention is `dex-upgrade-utils-<version-number>-<build-number>.tar.gz`.
2. Load the downloaded image into the host machine docker runtime:

```
docker load < dex-upgrade-utils-<version-number>-<build-number>.tar.gz
```

Example:

```
docker load < dex-upgrade-utils-1.19.1-b184.tar.gz
```

3. Create a directory in the host machine and export that path as `BASE_WORK_DIR`.

```
mkdir <host_machine_path>
export BASE_WORK_DIR=<host_machine_path>
```

Example:

```
mkdir /opt/backup-restore
export BASE_WORK_DIR=/opt/backup-restore
```

4. Create backup and secrets directories in the `BASE_WORK_DIR` directory and update the access permissions. The secrets directory stores the kubeconfig and CDP DE Admin credentials files. The backup directory will store the backup file which will be generated when you backup the CDE Service.

```
cd $BASE_WORK_DIR
mkdir backup secrets
chmod 775 backup
```

5. Place the CDP credentials file of the *DEAdmin* user and *administrator* kubeconfig file in the `$BASE_WORK_DIR/secrets` directory.
6. Create the `cde-upgrade-util.properties` file with the information described below and save it in the `$BASE_WORK_DIR` directory.

```
cdp_k8s_namespace:<CDP control plane k8s namespace>
cdp_endpoint:<CDP control plane endpoint>
credential_file_path:<Path to the DEAdmin user CDP credentials file>
de_admin_user:<DEAdmin user-id>
de_admin_password:<DEAdmin user's password must be in base64 encoded form
at. Use the echo -n <password> | base64 command to encode the password. >
tls_insecure:<Keep it false if you are using a self-signed certificate>
auto_unpause_jobs: <Specify it as "true" if you want to automatically re
sume the jobs that were paused during the backup phase. The jobs will be
resumed after you restore the CDE service.>
platform_type:<Platform type, can be ECS (Embedded Container Service) or
OCP (OpenShift Container Platform)>
```

Example:

```
$ cat $BASE_WORK_DIR/cde-upgrade-util.properties

cdp_k8s_namespace=cdp-test
cdp_endpoint=https://console-cdp-test.apps.cluster.example.com
credential_file_path=/home/dex/.cdp/credentials
de_admin_user=user
de_admin_password=cGFzZ3dvcmQ=
tls_insecure=true
auto_unpause_jobs=true
```


```
platform_type=ECS
```



**Note:** You must always set the value of the `credential_file_path` property as `/home/dex/.cdp/credentials` and should not be changed.



**Warning:** You can specify the `cdp_env_override:<environment-name>` optional property in the `cde-upgrade-util.properties` file, if you want to change the environment of the CDE service that is being restored. But, if you change the environment during restore, it will lead to loss of old spark jobs' logs and event logs that were there in the old virtual clusters.

7. Make a note of the details of the CDE service that is being migrated. This information is required if you are using a CDP database that is external and is not accessible from the container which is running the `cde-upgrade` endpoint stability commands. Identify the cluster endpoint:
  - a. In the Cloudera Data Platform (CDP) console, click the Data Engineering tile. The CDE Home page displays.
  - b. Click Administration in the left navigation menu. The Administration page displays.
  - c.
    - In the Services column on the left, click  icon corresponding to the CDE service whose endpoint you want to migrate.
  - d. Make a note of the CDE cluster ID.
8. During the restore operation, both old and the new CDE services use the same resources allocated to existing CDE service. Hence, you must double the resource pool size using the Quota Management option. For example, if `root.default.sales` is the pool that is used for the old or existing CDE service, you must double the CPU and memory resources of this pool. Also, make sure that you have sufficient hardware when doubling the resource pool size.

### What to do next

You must now expand the resource pool, and then upgrade your CDP platform before you restore the CDE service. For information about configuring resource pool and capacity, see *Managing cluster resources using Quota Management*

## Backing up CDE service using the docker image

You must run the docker image to take backup of a Cloudera Data Engineering (CDE) service. It takes backup of all the active virtual clusters in that CDE service. You can take backup of only an active CDE service.

### Before you begin

You must download the `dex-upgrade-utils` docker image and create the `cde-upgrade-util.properties` file before backing up jobs as described in the *Prerequisites for upgrading CDE Service with endpoint stability* section.



**Warning:** You must make sure to allocate sufficient downtime before you proceed further. If you start the backup procedure, you cannot create, edit, or run jobs in the existing CDE service and its associated virtual clusters until the backup is complete. The virtual clusters will be in the read-only mode after you backup the service and until you restore it.



**Important:** It is recommended to copy the logs of the commands run from the terminal and save them on your machine. This will be helpful in debugging or when raising a support ticket. You can also increase the terminal buffer size and save the terminal logs of each command for reference.

### Procedure

Run the `dex-upgrade-utils` docker image on the host machine:

```
$ export BACKUP_OUTPUT_DIR=/home/dex/backup

$ docker run \
-v <kubeconfig_file_path>:/home/dex/.kube/config:ro \
-v <cdp_credential_file_path>:/home/dex/.cdp/credentials:ro \
```

```
-v <cde-upgrade-util.properties_file_path>:/opt/cde-backup-restore/scripts/
backup-restore/cde-upgrade-util.properties:ro \
-v <local_backup_directory>:$BACKUP_OUTPUT_DIR \
-e KUBECONFIG=/home/dex/.kube/config \
<docker_image_name>:<docker_image_version> prepare-for-upgrade -s <cde-clust
er-id> -o $BACKUP_OUTPUT_DIR
```



**Important:** All the paths to the right side of colon (:) in volume mounts, that is, paths inside the container are fixed paths and must not be changed. Here -s is the CDE service ID and -o is the backup output directory path in the container. The backup output directory value must always be \$BACKUP\_OUTPUT\_DIR and should not be changed.

Example:

```
$ docker run \
-v $BASE_WORK_DIR/secrets/kubeconfig:/home/dex/.kube/config:ro \
-v $BASE_WORK_DIR/secrets/credentials:/home/dex/.cdp/credentials:ro \
-v $BASE_WORK_DIR/cde-upgrade-util.properties:/opt/cde-backup-restore/scr
ipts/backup-restore/cde-upgrade-util.properties:ro \
-v $BASE_WORK_DIR/backup:$BACKUP_OUTPUT_DIR \
-e KUBECONFIG=/home/dex/.kube/config \
docker-private.infra.cloudera.com/cloudera/dex/dex-upgrade-utils:1.19.1 pr
epare-for-upgrade -s cluster-c2dhkp22 -o $BACKUP_OUTPUT_DIR
```

### Results

You have now taken the CDE service backup as a ZIP file. You can make a note of the Zip file name from the logs to use it while restoring the CDE service.

### What to do next

You must now expand the resource pool, and then upgrade your Cloudera Data Platform (CDP) before you restore the CDE service. For information about configuring resource pool and capacity, see *Managing cluster resources using Quota Management*.

### Related Information

[Upgrading CDP on OpenShift](#)

[Prerequisites for migrating CDE endpoints](#)

[Managing cluster resources using Quota Management](#)

## Pre-upgrade - Regenerate external DB cert as SAN (if applicable)

If you are upgrading from CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1, and you were previously using an external Control Plane metadata database, you must regenerate the DB certificate with SAN before upgrading to CDP Private Cloud Data Services 1.5.1.

### Procedure

1. Generate certificates with SAN for the external Control Plane metadata database, for example server.crt and server.key.
2. Take a backup of the previous certificates and copy them to postgres.

The certificates will be available in the /var/lib/pgsql/12/data directory on the Private Cloud Base cluster host.

3. Use the following command format to change the owner to postgres:

```
chown postgres:postgres <file_name>
```

For example:

```
chown postgres:postgres server.crt
chown postgres:postgres server.key
```

4. Restart postgres:

```
systemctl restart postgresql-12
```

5. Update the certificates in all Cloudera Manager agents and restart the agents:

Get the truststore password from the /etc/hadoop/conf.cloudera.HDFS-1/ssl-client.xml file.

- a) To view the certificates in the truststore:

```
keytool -list -rfc -keystore /var/lib/cloudera-scm-agent/agent-cert/cm-
auto-global_truststore.jks -storetype JKS -storepass <truststore_pass
word>
```

- b) Delete the existing postgres certificate:

```
keytool -delete -alias postgresql -rfc -keystore /var/lib/cloudera-scm-a
gent/agent-cert/cm-auto-global_truststore.jks -storetype JKS -storepass
<truststore_password>
```

- c) Import the new certificate into the truststore:

```
keytool -import -file <cert_location> -alias postgresql -rfc -keystore /
var/lib/cloudera-scm-agent/agent-cert/cm-auto-global_truststore.jks -sto
retype JKS -storepass <truststore_password>
```

- d) Restart the agent:

```
systemctl restart cloudera-scm-agent
```

6. In the Private Cloud Management Console UI, update the certificate via: Administration > CA Certificates > Certificate type = External Database.

7. Perform the following additional steps for CDW and CML:

- a) CDW:

When any certificate is updated using the Management console, you must perform a refresh DBC operation.

On the CDW Overview page, select Default DBC Options > Refresh.

- b) CML:

Once the certificate is updated, the MLX service should be restarted at the K8s level. Restart the following pods in the <CDP> namespace:

```
dp-mlx-control-plane-app-XXX
dp-cadence-worker-XXX
dp-health-poller-XXX
```

## OCP upgrade steps for CDP Private Cloud Data Services 1.5.1

Updating CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1 on OCP requires you to upgrade earlier OCP versions to a version supported by CDP Private Cloud Data Services 1.5.1. This process involves incremental OCP version upgrades in conjunction with CDP Private Cloud Data Services updates and validations.

### OCP upgrade steps for CDP Private Cloud Data Services 1.4.1 to 1.5.1

Starting point: CDP Private Cloud Data Services 1.4.1 on OCP 4.8.

1. Upgrade OCP from 4.8 to 4.9.
2. Upgrade OCP from 4.9 to 4.10.
3. Update CDP Private Cloud Data Services from 1.4.1 to 1.5.1.
4. Perform post-upgrade validations of existing resources.
5. Upgrade OCP from 4.10 to 4.11.
6. Perform validations on all data services to verify that the new and preexisting data and workloads continue to function properly.

### OCP upgrade steps for CDP Private Cloud Data Services 1.5.0 to 1.5.1

Starting point: CDP Private Cloud Data Services 1.5.0 on OCP 4.10.

1. Update CDP Private Cloud Data Services from 1.5.0 to 1.5.1.
2. Perform post-upgrade validations of existing resources.
3. Upgrade OCP from 4.10 to 4.11.
4. Perform validations on all data services to verify that the new and preexisting data and workloads continue to function properly.

## Updating CDP Private Cloud Data Services

You can update your existing CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1 without performing an uninstall. After the update is complete, you may need to upgrade the underlying OpenShift Container Platform. See the [Software Support Matrix for OpenShift](#) for more information about supported OCP versions.

### Before you begin

- Review the [Software Support Matrix for OpenShift](#).
- As of CDP Private Cloud Data Services 1.5.1, external metadata databases are no longer supported. If you are upgrading from CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1, and you were previously using an external Control Plane database, you must run the following psql commands to create the required databases. You should also ensure that the three new databases are owned by the common database users known by the control plane.

```
CREATE DATABASE db-dss-app;  
CREATE DATABASE db-cadence;  
CREATE DATABASE db-cadence-visibility;
```

- If you are upgrading from CDP Private Cloud Data Services 1.4.1 or 1.5.0 to 1.5.1, and you were previously using an external Control Plane database, you must regenerate the DB certificate with SAN before upgrading to CDP Private Cloud Data Services 1.5.1.
- Make a backup of the OpenShift routes before upgrading to 1.5.1.

Ensure that you have the following before you update:

- Ensure that the kubeconfig has permissions to create Kubernetes namespaces.
- Back up all of the external databases used by CDP Private Cloud Data Services.

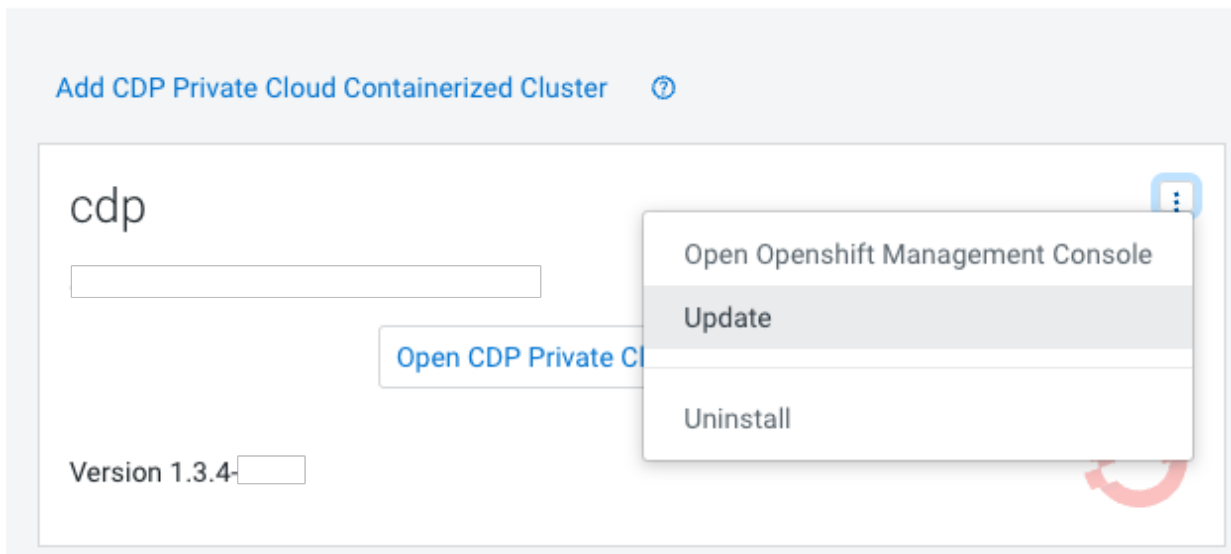
- One or more environments registered in CDP Private Cloud Data Services.
- One of the registered environment has one or more Cloudera Data Warehouse (CDW) or Cloudera Machine Learning (CML) experience workspaces.
- A Kubeconfig file for the OCP cluster.
- Access to the Cloudera Private Cloud repositories (archive.cloudera.com).
- Administrator access to OCP and Privileged access to your external Vault.

### Procedure

1.

In Cloudera Manager, navigate to CDP Private Cloud Data Services and click  . Click Update.

## CDP Private Cloud Data Services



- On the Getting Started page, you can select the Install method - Air Gapped or Internet and proceed.

### Internet install method

Update Private Cloud Data Services (cdp)

1 Getting Started

2 Collect Information

3 Update Progress

4 Summary

#### Getting Started

This wizard provides step-by-step guidance for updating CDP Private Cloud Data Services.

Visit the [CDP Private Cloud](#) documentation for more information.

Current Version  
1.3.4

Install Method  
 Internet  Air Gapped

1. Select Repository

Please ensure all the Data Lake clusters are running Cloudera Runtime 7.1.6 or greater

You are about to update CDP Private Cloud Data Services to version 1.4.0. This is a **minor version** update. Please make sure you have backed up all the external databases.

### Air Gapped install method

Update Private Cloud Data Services (cdp)

1 Getting Started

2 Collect Information

3 Update Progress

4 Summary

#### Getting Started

This wizard provides step-by-step guidance for updating CDP Private Cloud Data Services.

Visit the [CDP Private Cloud](#) documentation for more information.

Current Version  
1.3.4

Install Method  
 Internet  Air Gapped

Installing via a local mirror with an http server. You will need to setup a full mirror of Cloudera's repositories via a temporary http server within the perimeter network of all hosts.

- Download everything under `https://archive.cloudera.com/p/cdp-pvc-ds/latest`

```
$ wget -l 0 --recursive --no-parent -e robots=off -nH --cut-dirs=2 --reject="index.html*" -t 10 https://<username>:<password>@archive.cloudera.com/p/cdp-pvc-ds/latest
```
- Modify the file `manifest.json` inside the downloaded directory, change `"http_url": "..."` to `"http_url": "http://your_local_repo/cdp-pvc-ds/latest"`
- Mirror the downloaded directory to your local http server, e.g. `http://your_local_repo/cdp-pvc-ds/latest`
- Add `http://your_local_repo/cdp-pvc-ds/latest` to your `Custom Repository` settings and select it from the dropdown below.
- Select Repository

Please ensure all the Data Lake clusters are running Cloudera Runtime 7.1.6 or greater

You are about to update CDP Private Cloud Data Services to version 1.4.0. This is a **minor version** update. Please make sure you have backed up all the external databases.

Click Continue.



3. On the Collect Information page, upload a Kubernetes configuration (kubeconfig) file from your existing environment. You can obtain this file from your OpenShift Container Platform administrator. Click Continue.

## Update Private Cloud Data Services (cdp)

Getting Started

**2 Collect Information**

3 Update Progress

4 Summary

### Collect Information

#### Kubernetes Environment

#### Kubernetes Configuration

[Choose File](#)

#### Kubernetes Cluster

4. On the Update Progress page, you can see the progress of your update. Click Continue.

## Update Private Cloud Data Services (cdp)

- ✓ Getting Started
- ✓ Collect Information
- 3 Update Progress
- 4 Summary

### Update Progress

Updating the CDP Private Cloud Management Console in the namespace cdp.

- ✓ Downloading the CDP Private Cloud update utility.
- ✓ Extracting the CDP Private Cloud update utility.
- ✓ Configuring and updating the helm charts.
- ✓ Waiting for all the pods to start or timeout.

▼ Show Logs

cdp-release-dps-gateway-1.0-cf7db56b-mt7tg	3/3	Running	0	3m48s
cdp-release-dwx-server-7587f9796f-h5555	2/2	Running	0	3m28s
cdp-release-dwx-ui-694757cc48-m2v1b	2/2	Running	0	3m20s
cdp-release-dwx-ui-694757cc48-mtnv1	2/2	Running	0	3m27s
cdp-release-grafana-59fdd998fd-679b2	3/3	Running	0	3m19s
cdp-release-logger-alert-receiver-86d67cdfb-hhgfs	2/2	Running	0	3m18s



### Important:

During the "Upgrade Control Plane" step of the CDP upgrade process, the grafana pod can get stuck in the terminating state. This usually means that all other Control Plane pods are in the running state, but for grafana, there is one pod that is in running state and there is one pod that is stuck in terminating state. The terminating pod has the following message:

```
containers with incomplete status: [multilog-init grafana-sc-datasources]
```

If you search for the terminating pod id in the kubelet log on the host, the following error message can be found:

```
E0531 2209 kuberuntime_sandbox.go:70] CreatePodSandbox for pod "<pod id>" failed: rpc error: code = Unknown desc = error reading container (probably exited) json message: EOF
```

If there is a grafana pod stuck in terminating state, run the following command on the ECS Server host:

```
<grafana-pod-id> --force --grace-period=0
```

5. After the update is complete, the Summary page appears. You can now Launch CDP Private Cloud from here.

## Update Private Cloud Data Services (cdp)

- ✓ Getting Started
- ✓ Collect Information
- ✓ Update Progress
- 4 Summary

### Summary

CDP Private Cloud has been updated. Click Launch CDP Private Cloud to proceed.

Launch CDP Private Cloud

Or you can navigate to the CDP Private Cloud Data Services page and click Open CDP Private Cloud Data Services.

CDP Private Cloud Data Services opens up in a new window.

### What to do next

- After upgrade, the Cloudera Manager admin role may be missing the Host Administrators privilege in an upgraded cluster. The cluster administrator should run the following command to manually add this privilege to the role.

```
ipa role-add-privilege <cmadminrole> --privileges="Host Administrators"
```

- If you need to restore the control plane on a CDP Private Cloud Data Services 1.5.1 OpenShift cluster using a 1.5.0 backup, contact Cloudera Customer Support.

## Completing post OCP update tasks

If you are using CDE, after you complete the OpenShift Container Platform (OCP) upgrade, ensure that the steps done before OCP upgrade are reverted.

### Procedure

- Unpause all Airflow jobs and scheduled Spark jobs that were paused before upgrade.
- Scale back the CDE embedded database statefulset to 1.

OpenShift CLI

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Kubernetes CLI

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

## Post-upgrade - Ozone Gateway validation

If you are using CDE, after upgrading CDP Private Cloud Data Services you must validate that the Ozone Gateway is working as expected. This procedure applies to both 1.4.1 to 1.5.1 and 1.5.0 to 1.5.1 upgrades. You can run the following commands to get the types of logs that are available with the job run:

### Command 1

```
cde run logs --id <run_id> --show-types --vcluster-endpoint <job_api_url> --cde-endpoint <cde_control_plane_endpoint> --tls-insecure
```

For example,

```
cde run logs --id 8 --show-types --vcluster-endpoint https://76fsk4rz.cde-fm-ttv45d.apps.apps.shared-rke-dev-01.kcloud.cloudera.com/dex/api/v1 --cde-endpoint https://console-cdp-keshaw.apps.shared-rke-dev-01.kcloud.cloudera.com --tls-insecure
```

Log:

TYPE	ENTITY	STREAM	ENTITY DEFAULT
driver/stderr	Driver	stderr	True
driver/stdout	Driver	stdout	False
executor_1/stderr	Executor 1	stderr	True

TYPE	ENTITY	STREAM	ENTITY DEFAULT
executor_2/stdout	Executor 2	stdout	False

## Command 2

```
cde run logs --id <run_id> --type <log_type> --vcluster-endpoint <job_api_url>
--cdp-endpoint <cdp_control_plane_endpoint> --tls-insecure
```

For example,

```
cde run logs --id 8 --type driver/stderr --vcluster-endpoint https://76fsk4r
z.cde-fmttv45d.apps.apps.shared-rke-dev-01.kcloud.cloudera.com/dex/api/v1 --
cdp-endpoint https://console-cdp-keshaw.apps.shared-rke-dev-01.kcloud.cloude
ra.com --tls-insecure
```

Log:

```
Setting spark.hadoop.yarn.resourcemanager.principal to hive
23/05/22 09:27:28 INFO SparkContext: Running Spark version 3.2.3.1.19.71720
00.0-38
23/05/22 09:27:28 INFO ResourceUtils: =====
=====
23/05/22 09:27:28 INFO ResourceUtils: No custom resources configured for sp
ark.driver.
23/05/22 09:27:28 INFO ResourceUtils: =====
=====
23/05/22 09:27:28 INFO SparkContext: Submitted application: PythonPi
23/05/22 09:27:28 INFO ResourceProfile: Default ResourceProfile created, e
xecutor resources: Map(cores -> name: cores, amount: 1, script: , vendor: ,
memory -> name: memory, amount: 1024, script: , vendor: , offHeap -> name: o
ffHeap, amount: 0, script: , vendor: ), task resources: Map(cpus -> name: cp
us, amount: 1.0)
23/05/22 09:27:29 INFO ResourceProfile: Limiting resource is cpus at 1 tasks
per executor
23/05/22 09:27:29 INFO ResourceProfileManager: Added ResourceProfile id: 0
23/05/22 09:27:29 INFO SecurityManager: Changing view acls to: sparkuser,c
dpuser1
23/05/22 09:27:29 INFO SecurityManager: Changing modify acls to: sparkuser,c
dpuser1
23/05/22 09:27:29 INFO SecurityManager: Changing view acls groups to:
23/05/22 09:27:29 INFO SecurityManager: Changing modify acls groups to:
23/05/22 09:27:29 INFO SecurityManager: SecurityManager: authentication en
abled; ui acls disabled; users with view permissions: Set(sparkuser, cdpuse
r1); groups with view permissions: Set(); users with modify permissions: Se
t(sparkuser, cdpuser1); groups with modify permissions: Set()
.....
.....
```

## Results

- If you can see the driver pod logs, then Ozone Gateway is working as expected and you can go ahead with the upgrade.
- If the logs do not appear, then you can try restarting the Ozone Gateway and get Spark job's driver log to validate if Ozone gateway is healthy or not.
- If you do not get the Spark job driver log, then you must contact Cloudera Support.
- For more information about configuring CDE CLI, see [Using the Cloudera Data Engineering command line interface](#)

## Recovering a corrupted CDE Embedded database

In case you did not stop the jobs and scale down CDE embedded databases but completed the upgrade of OpenShift Container Platform (OCP), there is a chance of the CDE embedded database getting corrupted which causes the virtual clusters to become inaccessible. Follow the below steps to recover the CDE embedded database.

### Procedure

#### 1. Identifying the CDE Namespace

- a) Navigate to the Cloudera Data Engineering Overview page by clicking the Data Engineering tile in the Cloudera Data Platform (CDP) management console.
- b) In the CDE Services column, click Service Details for the CDE service.
- c) Note the Cluster ID shown in the page. For example, if the Cluster ID is *cluster-abcd1234*, then the CDE Namespace is *dex-base-abcd1234*.
- d) Use this CDE Namespace (in the above example, it is *dex-base-abcd1234*) in the following instructions to run kubernetes commands.

#### 2. Edit the dex-base-db-server-config configuration map and add the `innodb_force_recovery=4` configuration in the `[mysqld]` section.

OpenShift CLI

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Kubernetes CLI

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Example snippet:

```
# Please edit the object below. Lines beginning with a '#' will be ignored,
# and an empty file will abort the edit. If an error occurs while saving
# this file
# will be reopened with the relevant failures.
#
apiVersion: v1
data:
  my.cnf: |-
    [mysqld]
    port=3306
    default_authentication_plugin = mysql_native_password
    bind-address = 0.0.0.0
    innodb_force_recovery=4
```

#### 3. Scale down and then back up the CDE embedded database statefulset to restart it.

OpenShift CLI

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 0
```

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Kubernetes CLI

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 0
```

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Wait for 10 minutes for the CDE embedded database to complete the recovery.

4. Edit the dex-base-db-server-config configuration map again by removing the previously added `innodb_force_recovery=4` configuration under the `[mysqld]` section.

OpenShift CLI

```
oc edit configmap/dex-base-db-server-config --namespace <CDE Namespace>
```

Kubernetes CLI

```
kubectl edit configmap/dex-base-db-server-config --namespace <CDE Namespace>
```

5. Scale down and then back up the CDE embedded database statefulset to restart it again.

OpenShift CLI

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 0
```

```
oc scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Kubernetes CLI

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 0
```

```
kubectl scale statefulset/cdp-cde-embedded-db --namespace <CDE Namespace> --replicas 1
```

Wait for all the CDE Virtual Clusters to be accessible. This usually takes about 10 minutes.

## Post-upgrade - Restoring CDE Service for Endpoint Stability

After you take backup of the CDE service and upgrade your CDP platform, you can restore the Cloudera Data Engineering (CDE) service with same endpoints.

### Restoring a CDE service

You can restore the Cloudera Data Engineering (CDE) service with its jobs, resources, job run history, and job logs from a backed-up ZIP file.

#### Before you begin

You must back up the CDE service, you must expand the resource pool, and then upgrade your Cloudera Data Platform (CDP) to restore the CDE service. You must validate that the Ozone Gateway is working as expected by performing the steps listed in the *Post upgrade - Ozone Gateway validation* topic.



**Important:** It is recommended to copy the logs of the commands run from the terminal and save them on your machine. This will be helpful in debugging or when raising a support ticket. You can also increase the terminal buffer size and save the terminal logs of each command for reference.

## Procedure

1. If you have exited from the previous terminal where the pre-upgrade commands were run for CDE Service being upgraded, then you have to export these variables before running any docker command.

```
export BASE_WORK_DIR=<host_machine_path>
export BACKUP_OUTPUT_DIR=/home/dex/backup
```

2. Run the dex-upgrade-utils docker image to restore the service on the same machine where you have completed the prerequisite steps.

```
$ docker run \
-v <kubeconfig_file_path>:/home/dex/.kube/config:ro \
-v <cdp_credential_file_path>:/home/dex/.cdp/credentials:ro \
-v <cde-upgrade-util.properties_file_path>:/opt/cde-backup-restore/scripts/backup-restore/cde-upgrade-util.properties:ro \
-v <local_backup_directory>:$BACKUP_OUTPUT_DIR \
-e KUBECONFIG=/home/dex/.kube/config \
<docker_image_name>:<docker_image_version> restore-service -s <cde-cluster-id> -f $BACKUP_OUTPUT_DIR/<backup-zip-file-name>
```

Here -s is the CDE service ID and -f is the backup output filepath in the container.

Example:

```
$ docker run \
-v $BASE_WORK_DIR/secrets/kubeconfig:/home/dex/.kube/config:ro \
-v $BASE_WORK_DIR/secrets/credentials:/home/dex/.cdp/credentials:ro \
-v $BASE_WORK_DIR/cde-upgrade-util.properties:/opt/cde-backup-restore/scripts/backup-restore/cde-upgrade-util.properties:ro \
-v $BASE_WORK_DIR/backup:$BACKUP_OUTPUT_DIR \
-e KUBECONFIG=/home/dex/.kube/config \
docker-private.infra.cloudera.com/cloudera/dex/dex-upgrade-utils:1.19.1
restore-service -s cluster-c2dhkp22 -f $BACKUP_OUTPUT_DIR/cluster-c2dhkp22-2023-03-10T06_00_05.zip
```

3. [Optional] If you are using a CDP database that is external and is not accessible from the container which is running the CDE upgrade command, then the following SQL statements are displayed in the logs.

Example:

```
2023-05-17 13:02:29,551 [INFO] CDP control plane database is external and
not accessible
2023-05-17 13:02:29,551 [INFO] Please rename the old & new cde service
name manually by executing below SQL statement
2023-05-17 13:02:29,551 [INFO]      update cluster set name = 'cde-base-
service-1' where id = 'cluster-92c2fkgb';
2023-05-17 13:02:29,551 [INFO]      update cluster set name = 'cde-
base-service-1-18-1' where id = 'cluster-rtc234g8';
2023-05-17 13:02:29,551 [INFO] Please update the lastupdated time of ol
d cde service in db to extend the expiry interval of db entry for suppor
ting CDE CLI after old CDE service cleanup
2023-05-17 13:02:29,551 [INFO]      update cluster set lastupdated =
'2023-05-05 06:16:37.786199' where id = 'cluster-rtc234g8';
```

-----

You must execute the above SQL statements to complete the restore process.

If you have closed the terminal or do not have this information, run the following SQL statements and specify the cluster details. Use the cluster ID that you noted when performing the steps listed in the *Prerequisites for upgrading CDE Service with endpoint stability* section.

- a.** Rename old CDE service to a different name.

```
update cluster set name = '<modified_service_name>' where id = '<old_cde_cluster_id>;'
```

Example:

```
update cluster set name = 'cde-base-service-1' where id = 'cluster-92c2fkgb'
```

- b.** Rename the new CDE service to the old CDE service name.

```
update cluster set name = '<old_cde_service_name>' where id = '<new_cde_cluster_id>;'
```

Example:

```
update cluster set name = 'cde-base-service-1-18-1' where id = 'cluster-rtc234g8'
```

- c.** Run the following command so that when the old CDE service is deleted/disabled then it is not cleared from the database for the next two years. The timestamp format must be the same and should be two years of the current time.

```
update cluster set lastupdated = 'YYYY-MM-DD hh:mm:ss[.nnn]' where id = '<old_cde_cluster_id>;'
```

Example:


```
update cluster set lastupdated = '2023-05-05 06:16:37.786199' where id = 'cluster-rtc234g8'
```



4. [Optional] When the cluster is restored, self-signed certificates are automatically added to the new virtual clusters. To use a signed certificate and private key, perform the following:

a. Identify the virtual cluster endpoint:

1. In the Cloudera Data Platform (CDP) console, click the Data Engineering tile. The CDE Home page displays.
2. Click Administration in the left navigation menu. The Administration page displays.
- 3.

In the Services column on the left, click  corresponding to the CDE service whose endpoint you want to migrate.

4. Click the JOBS API URL link to copy the URL to your clipboard.
5. Paste the URL into a text editor to identify the endpoint host. For example, the URL is similar to the following:

```
http://dfdj6kgx.cde-2cdxw5x5.ecs-demo.example.com/dex/api/v1
```

The endpoint host is `dfdj6kgx.cde-2cdxw5x5.ecs-demo.example.com`.

- b. Provide a signed certificate and private key. Make sure that the certificate is a wildcard certificate for the cluster endpoint. For example, `*.dfdj6kgx.cde-2cdxw5x5.ecs-demo.example.com`.

```
./cdp-cde-utils.sh init-virtual-cluster -h <endpoint_host> -c /path/to/cert -k /path/to/keyfile
```

For example, using the previous example URL, the endpoint host is `dfdj6kgx.cde-2cdxw5x5.ecs-demo.example.com`:

```
./cdp-cde-utils.sh init-virtual-cluster -h dfdj6kgx.cde-2cdxw5x5.ecs-demo.example.com -c /tmp/cde-pvc.crt -k /tmp/cde-pvc.key
```

You must perform this procedure for each virtual cluster you use.

5. After the restore operation completes, validate that the jobs and resources are restored by running the `cde job list` and `cde resource list` CLI commands or check the virtual cluster job UI.
 

In the Administration page of the CDE UI, you can see the old CDE service is appended with a version number. For example, if the old CDE service name was `cde-sales`, after the restore, the old CDE service name is something similar to `cde-sales-1-18.2`.
6. [Optional] You can now delete the old CDE service after validating that everything is working as expected. If you delete the old CDE service, then you can shrink the resource pool size back to its initial value which you expanded in the *Prerequisite* steps.

### Related Information

[Upgrading CDP on OpenShift](#)

[Upgrading CDP on OpenShift](#)

[Ozone Gateway validation](#)

## Rolling back the CDE Service Endpoint migration

You can use the rollback command to delete the new CDE service and restore the old CDE service in working condition.



**Important:** It is recommended to copy and save the logs of the commands run from the terminal and save them on your machine. This will be helpful in debugging or when raising a support ticket. You can also increase the terminal buffer size and save the terminal logs of each command for reference.

To rollback, the state of the CDE service must be in the Failed or Installed state before you restore it.

## Procedure

Run the `rollback-restore-service` command.

```
./cdp-cde-utils.sh rollback-restore-service -s <new-new-service-id> -f <path-to-the-backup-file>
```

Example:

```
./cdp-cde-utils.sh rollback-restore-service -s cluster-j8nmkx4 -f /home/dex/backup/cluster-sijokds-2023-05-23T07_57_57.zip
```

## Limitations

This page lists the current limitations that you might run into while migrating your CDE service endpoint.

- Airflow job logs of the old cluster will be lost after the Restore operation.
- The Spark UI tab for a completed job does not work on the first click. As a workaround, do the following:
  1. Click the Spark UI tab. Nothing is displayed.
  2. Click on some other tab. For example, the Logs tab.
  3. Click the Spark UI tab again. The Spark UI loads now.

## Post-upgrade tasks for Cloudera Data Warehouse

Post-upgrade steps for Cloudera Data Warehouse (CDW) vary depending on whether you are upgrading from 1.4.1 or 1.5.0. Perform the steps that are applicable to you.

### Before you upgrade

Review the [Release Notes](#) to learn about the new features, fixes, and known issues in this release, and more importantly, the [upgrade-related known issues](#).

### Upgrading from 1.4.1

If you are upgrading from CDP Private Cloud Data Services 1.4.1, then in-place upgrade cannot be performed. You must deactivate and reactivate the environment in CDW and recreate Virtual Warehouses with the desired configurations. All customization and configurations are lost when you deactivate an environment. Perform the following steps after upgrading the platform:

1. Log in to the Data Warehouse service as DWAdmin.
2. Note any custom configurations or settings that you have made in CDW.
3. Deactivate the environment in CDW.
4. Reactivate the environment in CDW.
5. Create Virtual Warehouses with your desired configuration.






**Attention:** If you upgrade the platform from 1.4.1 to 1.5.1, but you do not deactivate and reactivate your environment in CDW, you won't be able to create new Virtual Warehouses. Hue will also stop working. However, existing Virtual Warehouses will continue to operate using the existing runtime version and you will be able to query data using SQL client such as Beeline, `impala-shell`, or any other JDBC/ODBC client tools.

### Upgrading from 1.5.0

If you are upgrading from CDP Private Cloud Data Services 1.5.0, then you can perform in-place upgrade. In an in-place upgrade, you can directly upgrade the Database Catalog and Virtual Warehouses from the CDW UI without having to deactivate your environment. Perform the following steps after upgrading the platform:

1. Log in to the Data Warehouse service as DWAdmin.

2. Upgrade the Database Catalog by clicking  Upgrade .
3. Upgrade individual Virtual Warehouses by clicking  Upgrade .
4. Verify whether the upgrade is successful by checking the version information on the Database Catalog or Virtual Warehouse details page by clicking  Edit on the Database Catalog or Virtual Warehouse tile.

### What changes after the upgrade

- Starting with 1.5.1, Data Analytics Studio (DAS) has been deprecated and completely removed from CDW. After you upgrade the platform, any running DAS instances will be removed from the cluster. Cloudera recommends that you use Hue for querying and exploring data in CDW.
- If you upgrade the platform from 1.5.0 to the latest release, then the configuration of an existing environments stays the same as before. Configurations such as default file format, compression type, and transactional type are not copied from the base cluster. To copy configurations from the base cluster, you must reactivate the environment.

### Related Information

[Learn more about the CDW upgrade process](#)

[Activating OpenShift environments on CDW](#)

[Activating Embedded Container Service environments in CDW](#)