Cloudera DataFlow

# CDF Security

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## CLOUDERA

# Legal Notice

# Contents

# Cloudera Data Flow security

As a security administrator, understand the out-of-the box security features as well as the tasks that you need to perform to authorize Cloudera on cloud users.

Cloudera on cloud provides the following security features:

- User authentication
- Role-based user authorization
- Data encryption

You must assign roles to Cloudera on cloud users based on their Cloudera Data Flow job responsibilities.

## User authentication

Users are automatically authenticated through the Cloudera on cloud identity provider. For more information, see *Cloudera on cloud Security Overview*.

## Role-based user authorization

Cloudera Data Flow roles allow you to set user permissions. Through these permissions you can define actions a user or group is allowed to perform and you can also scope the resources a they can perform those actions on.

For more information on the Cloudera Data Flow roles, see *Cloudera Data Flow authorization*.

## Data encryption

Cloudera on cloud encrypts data at rest and in motion.

**Data at rest**

> When you import a flow definition, the flow definition is encrypted and stored in the Cloudera Data Flow Catalog. Cloudera Data Flow Catalog is a service that enables you to manage flow definitions centrally.

> **Note:**
> - Logs and the NiFi FlowFile, Content, and Provenance repositories are stored in your cloud account. Access to the logs and repositories is based on user permissions.
> - Before you import a flow definition:
>     - Verify that the flow definition will not write secure information to the logs
>     - Parameterize sensitive configuration

**Data in transit**

> When you deploy a flow, the encrypted flow definition is transferred to your cloud account where it is decrypted and deployed. During a flow deployment, data can be transferred between servers, systems, applications, and users. Every transfer is a secure and trusted exchange through TLS. Through cryptographic protocols, TLS encrypts and authenticates:

> - The flow definition from the Cloudera Data Flow Catalog to a Cloudera Data Flow environment.
> - The connections from the user's browser to the Cloudera Data Flow service.
> - The communication between the Cloudera Data Flow service and other services in the Cloudera on cloud Control Plane.
> - The communication between the Cloudera on cloud Control Plane services and environment services.
> - The communication between the Cloudera Data Flow service, flows, and shared services within an environment.

# Cloudera Data Flow user roles

As a security administrator with the PowerUser role, you must assign one or more Cloudera Data Flow roles to a user to allow the user to perform tasks in the Cloudera Data Flow Catalog, the Cloudera Data Flow environment, and the Apache NiFi cluster.

Review each of the following Cloudera Data Flow roles to determine which roles a user requires:

For information on configuring Cloudera user management, see *User Management* in the Cloudera Management Console documentation.

## DFAdmin

This role allows a user to manage the lifecycle of a Cloudera Data Flow environment.

> **Note:** The DFAdmin role does not act as a superset of the DFFlowAdmin and DFFlowUser roles. Users that have only the DFAdmin role cannot view or create flow deployments.

A user with the DFAdmin role can perform the following tasks:

- Enable a Cloudera environment for Cloudera Data Flow
- View an environment
- View environment details and Cloudera Data Flow Settings
- Disable an environment
- Update resource roles
- Grant remote access to an environment
- Revoke remote access to an environment
- Terminate all running deployments when disabling the Cloudera Data Flow service for an environment.

A user with the DFAdmin and PowerUser roles can perform the following additional tasks:

- Assign the DFAdmin role to other users
- Revoke the DFAdmin role from other users

## DFCatalogAdmin

This role allows a user to centrally manage flow definitions and ReadyFlows.

A user with the DFCatalogAdmin role can perform the following tasks in the Cloudera Data Flow Catalog:

- View and search flow definitions
- Import flow definitions
- Import new versions of existing flow definitions
- View flow definition details
- Publish flow drafts to the Catalog
- Delete flow definitions

A user with the DFCatalogAdmin role can perform the following tasks in the ReadyFlow Gallery:

- View and search ReadyFlows
- Add ReadyFlows to the Catalog

### DFCatalogPublisher

This role allows a user to perform the following tasks:

- View and search flow definitions
- Import flow definitions
- Import new versions of existing flow definitions
- View flow definition details
- Publish flow drafts to the Catalog

A user with the DFCatalogPublisher, and the DFCollectionMemeber or DFCollectionAdmin roles can perform the following additional task:

- Import a flow definition into a Catalog collection

### DFCatalogViewer

This role allows a user to perform the following tasks:

- View and search flow definitions in the Cloudera Data Flow Catalog
- View and search ReadyFlows in the ReadyFlow Gallery

### DFCollectionAdmin

This role is automatically assigned to users with DFCollectionsCreator role upon creating a collection.

A use with the DFCollectionAdmin role can perform the following roles within a collection:

- Add/remove users and groups
- Change user and group roles (DFCollectionAdmin, DFCollectionMember, or DFCollectionViewer)
- Modify the collection name and description
- Delete the collection.

### DFCollectionsAdmin

This role allows a user to centrally manage collections.

A user with the DFCollectionsAdmin role can perform the following tasks in a tenant:

- Create and manage collections
- Edit users and groups assigned to collections
- Delete collections

### DFCollectionsCreator

This role allows the user to create Cloudera Data Flow Catalog collections.

A user with the DFCollectionsCreator role can perform the following tasks in a tenant:

- Create and manage collections
- The DFCollectionsCreator automatically receives administrator (DFCollectionAdmin) role over collections they create. This role allows them to
  - Manage the collection
  - Edit users and groups assigned to the collection
  - Delete the collection

### DFCollectionMember

A user with the DFCollectionMember role can perform the following tasks in a Catalog collection:

- View flow definitions in the collection

- Publish flow definitions to the collection
- Import flow definitions to the collection
- Delete flow definitions from the collection
- Reassign flow definitions between collections (This requires DFCollectionMember or DFCollectionAdmin role both in the source and target collections) or move a flow definition out of the collection, rendering it 'unassigned'.

### DFCollectionViewer

A user with the DFCollectionViewer role can perform the following tasks in a Catalog collection.

- View flow definitions in the collection

A user with the DFFlowAdmin role and the DFCatalogViewer role can perform the following additional task:

- Deploy flow definitions

### DFFlowAdmin

This role allows a user to manage flow deployments in a Cloudera Data Flow environment. In addition, this role together with either the DFCatalogViewer or DFCatalogAdmin role allows the user to deploy flows.

A user with the DFFlowAdmin role alone can perform the following tasks:

- View a deployment on the dashboard
- View deployment details and settings
- View a deployment in NiFi
- Stop a deployment in NiFi
- Suspend a deployment in NiFi
- Terminate a deployment in NiFi
- Change NiFi version

A user with the DFFlowAdmin and PowerUser roles can perform the following additional tasks:

- Assign the DFFlowAdmin and DFFlowUser roles to other users
- Revoke the DFFlowAdmin and DFFlowUser roles from other users

A user with the DFFlowAdmin role and either the DFCatalogViewer or DFCatalogAdmin role can perform the following additional task:

- Deploy flow definitions

### DFFlowDeveloper

This role allows a user to view, search, create, and manage drafts in Flow Designer on environment level.

A user with the DFDeveloper role can perform the following tasks:

- Create a new draft
- View all drafts in an environment
- View all draft details and settings in an environment
- Update all drafts in an environment
- Start and end Test Sessions for any draft in an environment
- Delete any draft in an environment

A user with the DFDeveloper and the DFCatalogViewer, DFCatalogPublisher, or DFCatalogAdmin roles can perform the following additional tasks:

- Create drafts from flow definitions in the Cloudera Data Flow Catalog
- Create drafts from ReadyFlows in the ReadyFlow Gallery
- Publish drafts as flow definitions to the Catalog (DFCatalogPublisher or DFCatalogAdmin only)

### DFFlowUser

This role allows a user to view, search, and monitor flow deployments in a Cloudera Data Flow environment.

A user with the DFFlowUser role can perform the following tasks:

- View a deployment on the dashboard
- View deployment details and settings
- View a deployment in NiFi

### DFProjectAdmin

This role is automatically assigned to users with DFProjectCreator role upon creating a Project.

A user with the DFProjectAdmin role can perform the following tasks:

- Add/remove users and group
- Change user and group roles (DFProjectAdmin or DFProjectMember)
- Modify the Project name and description
- Delete the Project.

### DFProjectCreator

This role allows a user to create and manage Projects on environment level.

A user with the DFProjectCreator role can perform the following tasks:

- Create a Project.
- Edit a Project.
- Manage users and groups assigned to a Project.

### DFProjectMember

This role enables users to access resources assigned to a Project and perform actions on them that are allowed by their other user roles.

### DFProjectsAdmin

This role allows a user to centrally manage Projects.

A user with the DFProjectsAdmin role can perform the following tasks in a tenant:

- View and create Projects.
- Edit users and groups assigned to Projects.
- Delete Projects.

**Related Information**
User Management

# Cloudera Data Flow authorization process

As a security administrator with the Cloudera PowerUser role, understand the authorization process to allow Cloudera users to perform tasks.

Table *Tasks and roles* helps you identify the role or roles a user needs to perform certain comon tasks.

**Table 1: Tasks and roles**

| Task to perform | Role or roles required |
|---|---|
| Manage the lifecycle of a Cloudera Data Flow environment | • DFAdmin |
| Manage flow deployments in a Cloudera Data Flow environment | • DFFlowAdmin |
| Manage all Catalog collections | • DFCollectionsAdmin |
| Manage and delete flow definitions, manage and delete collections | • DFCatalogAdmin |
| Manage flow definitions with the exception of deletion | • DFCatalogPublisher |
| Create a Catalog collection | • DFCollectionsCreator or DFCollectionsAdmin |
| Create a flow deployment | • DFCollectionViewer role for the collection where the flow definition is located, or DFCatalogViewer to deploy unassigned flow definitions from the Catalog.<br>• DFFlowAdmin |
| Delete a Catalog Collection | • DFCollectionsAdmin |
| Develop flow definitions | • DFFlowDeveloper |
| Manage Members for a Catalog Collection | • DFCollectionAdmin |
| Import a flow definition into a Catalog collection | • DFCatalogPublisher<br>• DFCollectionMember or DFCollectionAdmin |
| Publish a flow draft to Catalog collection | • DFFlowDeveloper<br>• DFCollectionMember or DFCollectionAdmin |
| Move a flow definition between Catalog collections | • DFCollectionMember or DFCollectionAdmin for both the source and the target collections |
| Delete a flow definition in an existing Catalog collection | • DFCollectionMember or DFCollectionAdmin |
| Create projects | • DFProjectCreator |
| Manage any project in a workspace | • DFProjectsAdmin |
| Delete any project in a workspace | • DFProjectsAdmin |
| Manage members for a project | • DFProjectAdmin |
| Add resources to a project | • DFProjectMember or DFProjectAdmin |
| Manage resources in a project | • DFProjectMember or DFProjectAdmin |
| Reassign resources between projects | • DFProjectMember or DFProjectAdmin for both the source and the target projects |

# Assigning DFAdmin role to a user

To authorize a user to enable, disable, and administer a given Cloudera environment for Cloudera Data Flow, assign the DFAdmin role to the user. This role also permits the user to grant and revoke the ability to access the Cloudera Data Flow Kubernetes API server.

## Before you begin

• You must have PowerUser permission for the account where you want to perform this task.
• You must have Owner permission for the environment where you want to perform this task.

- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

**Procedure**

1. From the Cloudera Management Console, click Environments.

   The **Environment List** page appears.
2. Search for and select the environment you want the user to have rights to.

   The **Environment** page appears.
3. Click  Actions Manage Access .

   The **Environment Access** page appears.
4. Find the user and click Update Roles.
5. From the **Update Roles** dialog, select the DFAdmin role and any other role the user requires.
6. Click Update Roles.

## Assigning DFCatalogAdmin role to a user

To authorize a user to import and manage flow definitions in the Catalog and add ReadyFlows to the Catalog, you must assign the DFCatalogAdmin role to the user.

**Before you begin**

- You must have PowerUser permission for the account where you want to perform this task.

**Procedure**

1. From the Cloudera Management Console, click User Management.
2. Enter the user's name in the Search field.
3. Select the user from the list.

   The **User** page appears.
4. Go to the Roles tab.
5. Select Update Roles.
6. On the **Update Roles** dialog, select the DFCatalogAdmin role along with any other role the user requires.
7. Click Update.

## Assigning DFCatalogViewer role to a user

To authorize a user to view flow definitions in the Catalog, you must assign the DFCatalogViewer role to the user.

**Before you begin**

- You must have PowerUser permission for the account where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

**Procedure**

1. From the Cloudera Management Console, click User Management.
2. Enter the user's name in the Search field.
3. Select the user from the list.

   The **User** page appears.
4. Go to the Roles tab.
5. Select Update Roles.

6. On the **Update Roles** dialog, assign the DFCatalogViewer role to the user.

7. Click Update.

# Assigning DFCollectionsAdmin role to a user

To authorize a user to create and delete Collections, edit Users and Groups assigned to Collections within a tenant, you must assign the DFCollectionsAdmin role to the user.

### About this task

This user is automatically granted the DFCollectionAdmin role for Catalog collections they create.

### Before you begin

- You must have PowerUser permission for the account where you want to perform this task.
- You must have Owner permission for the environment where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

### Procedure

1. From the Cloudera Management Console, click User Management.

2. Enter the user's name in the Search field.

3. Select the user from the list.

   The **User** page appears.

4. Go to the Roles tab.

5. Select Update Roles.

6. From the **Update Roles** dialog, select the DFCollectionsAdmin role along with any other role the user requires.

7. Click Update.

# Assigning DFCollectionsCreator role to a user

To authorize a user to create Catalog collections, edit Users and Groups assigned to Collections, you must assign the DFCollectionsCreator role to the user.

### About this task

This user is automatically granted the DFCollectionAdmin role for Catalog collections they create.

### Before you begin

- You must have PowerUser permission for the account where you want to perform this task.
- You must have Owner permission for the environment where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

### Procedure

1. From the Cloudera Management Console, click User Management.

2. Enter the user's name in the Search field.

3. Select the user from the list.

   The **User** page appears.

4. Go to the Roles tab.

5. Select Update Roles.

6. From the **Update Roles** dialog, select the DFCollectionsCreator role.

7. Click Update Roles.

8. Click Synchronize Users to propagate the user role changes you made to the environment.

> **Note:** It may take up to five minutes for the user role changes to propagate to the Environment.

# Assigning DFFlowAdmin role to a user

To authorize a user to manage flow deployments in a Cloudera Data Flow environment, assign the DFFlowAdmin role to the user.

## Before you begin

- You must have PowerUser permission for the account where you want to perform this task.
- You must have Owner permission for the environment where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

## Procedure

1. From the Cloudera Management Console, click Environments.

    The **Environment List** page appears.

2. Search for and select the environment you want the user to have rights to.

    The **Environment** page appears.

3. Click Actions Manage Access .

    The **Environment Access** page appears.

4. Find the user and click Update Roles.

5. From the **Update Roles** dialog, select the DFFlowAdmin role.

6. Click Update Roles.

7. Click Synchronize Users to propagate the user role changes you made to the environment.

> **Note:** It may take up to five minutes for the user role changes to propagate to the Environment.

# Assigning DFFlowDeveloper role to a user

To authorize a user to create and manage drafts in a Cloudera Data Flow environment, assign the DFFlowDeveloper role to the user. To publish drafts to the Catalog as new flow definitions or versions of existing flow definitions, the user additionally needs the DFCatalogPublisher role.

## Before you begin

- You must have PowerUser permission for the account where you want to perform this task.
- You must have Owner permission for the environment where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

## About this task

> **Note:** To create drafts from flow definitions in the Catalog and ReadyFlows in the ReadyFlow Gallery, users also need the DFFlowViewer or the DFFlowAdmin role. To publish drafts to the Catalog as new flow definitions or versions of existing flow definitions, users need the DFCatalogPublisher role.

**Procedure**

1. From the Cloudera Management Console, click Environments.

   The **Environment List** page appears.

2. Search for and select the environment you want the user to have rights to.

   The **Environment** page appears.

3. Click  Actions Manage Access .

   The **Environment Access** page appears.

4. Find the user and click Update Roles.

5. From the **Update Roles** dialog, select the DFFlowDeveloper role.

6. Click Update Roles.

7. Click  Synchronize Users  to propagate the user role changes you made to the environment.

   **Note:**  It may take up to five minutes for the user role changes to propagate to the Environment.

## Assigning DFFlowUser role to a user

To authorize a user to view, search, and monitor deployments in a Cloudera Data Flow environment, assign the DFFlowUser role to the user.

**Before you begin**

- You must have PowerUser permission for the account where you want to perform this task.
- You must have Owner permission for the environment where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

**Procedure**

1. From the Cloudera Management Console, click Environments.

   The **Environment List** page appears.

2. Search for and select the environment you want the user to have rights to.

   The **Environment** page appears.

3. Click  Actions Manage Access .

   The **Environment Access** page appears.

4. Find the user and click Update Roles.

5. From the **Update Roles** dialog, select the DFFlowUser role and any other role the user requires.

6. Click Update Roles.

7. Click  Synchronize Users  to propagate the user role changes you made to the environment.

   **Note:**  It may take up to five minutes for the user role changes to propagate to the Environment.

## Assigning DFProjectsAdmin role to a user

To Authorize a user to create and delete Projects, edit Users and Groups assigned to Projects within a tenant, you must assign the DFProjectsAdmin role to the user.

**Before you begin**

You must have the Cloudera PowerUser role.

**Procedure**

1. From the Cloudera Management Console, click User Management.
2. Enter the user's name in the Search field.
3. Select the user from the list.

   The **User** page appears.
4. Go to the Roles tab.
5. Select Update Roles.
6. On the **Update Roles** dialog, select the DFProjectsAdmin role along with any other role the user requires.
7. Click Update.

## Assigning DFProjectCreator role to a user

To authorize a user to create and manage their own Projects, edit Users and Groups assigned to Projects within an environment, you must assign the DFProjectCreator role to the user.

**Before you begin**

- You must have PowerUser permission for the account where you want to perform this task.
- You must have Owner permission for the environment where you want to perform this task.
- You must have IAMViewer or IAMUser permission for the account where you want to perform this task.

**Procedure**

1. From the Cloudera Management Console, click Environments.

   The **Environment List** page appears.
2. Search for and select the environment you want the user to have rights to.

   The **Environment** page appears.
3. Click  Actions Manage Access .

   The **Environment Access** page appears.
4. Find the user and click Update Roles.
5. From the **Update Roles** dialog, select the DFProjectCreator role.
6. Click Update Roles.
7. Click  Synchronize Users  to propagate the user role changes you made to the environment.

   **Note:**  It may take up to five minutes for the user role changes to propagate to the Environment.

# Projects

Projects provide fine grained, role-based access control over resources within an environment.

Projects are a layer of role-based access control in Cloudera Data Flow. You may consider them as logical containers that you can use to govern access to resources within an environment.

Resources (flow deployments, flow drafts, Inbound Connections, and custom NARs) can have one of two states within an environment:

- Unassigned - the resource is not assigned to a particular Project, it is freely accessible for every user or group with the appropriate user role for that environment.
- Assigned to a Project - the resource is only accessible to users or groups with access to that particular Project. This assignment is exclusive, you cannot assign the same resource to more than one Project at a time.

The roles associated with projects are additive, they work in conjunction with user permissions controlling the types of actions a user or group is allowed to perform in a Cloudera on cloud environment.

Projects introduces the following user roles:

**DFProjectsAdmin**

> This role enables users to manage all Projects in all environments within a tenant.

**DFProjectCreator**

> This role enables users to create Projects in an Environment. When creating a Project, they automatically become the DFProjectAdmin in that Project.

**DFProjectAdmin**

> This role is automatically assigned to users with DFProjectCreator role upon creating a Project. DFProjectAdmins can add/remove users and groups, changing user and group roles (DFProjectAdmin or DFProjectMember), modify the Project name and description, and delete the Project.

**DFProjectMember**

> This role enables users to access resources assigned to a Project and perform actions on them that are allowed by their other user roles.

For example, users with DFFlowUser role in 'Environment_A', and DFProjectMember role in 'Project_Alpha' are able to view flow deployments 'Deployment-1' that is assigned to 'Project_Alpha' and 'Deployment-2' that is currently unassigned. They cannot view 'Deployment-3' that is assigned to Project_Beta, just as they do not see other resource types (in this example draft flows 'Draft-1', 'Draft-2', and 'Draft-3') regardless of their assignment status. That is, the DFFlowUser role defines the types of actions they can perform in the environment, and the 'DFProjectMember' role defines the resources within that environment they can perform those actions on.
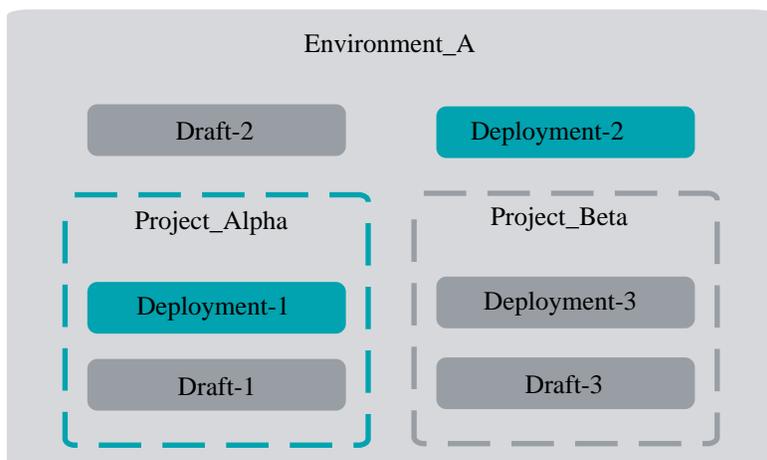


# Creating a Project

You can create a Project to limit the visibility of drafts, deployments, Inbound Connections, and custom NAR Configurations within an Environment.

## Before you begin

- Make sure that you have DFProjectCreator permission to perform this task. For information on account and resource roles, see Cloudera Data Flow authorization.
- Cloudera Data Flow must be enabled for the Environment.

**Procedure**

**1.**
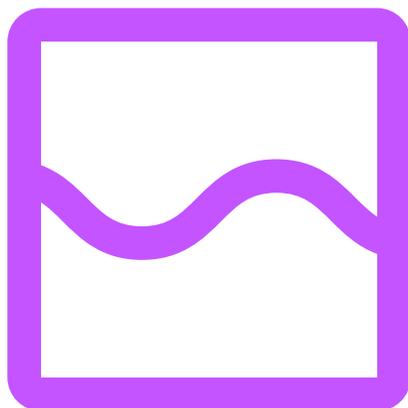


Go to                                                                                      Data Flow ⊞ Projects .

**2.** Click ⊕ Create Project.

**3.** Select Target Workspace.

**4.** Provide Project Name.

> **Note:** Project names need to be unique within a Workspace. The wizard indicates whether a name is valid by displaying a green check below the Project Name text box.

**5.** Provide a Project Description.

**6.** Click Create.

> **Note:** After creating a Project, it needs to be synchronized before resources can be assigned. This may take a few minutes and during the synchronization, the new Project is not available in the Workspace Resources view yet.

# Editing a Project

You can change the name and the description of Projects where you have DFProjectAdmin permission.

**Before you begin**

- Make sure that you have DFProjectAdmin permission for the project you want to edit to perform this task.

**Procedure**

**1.**
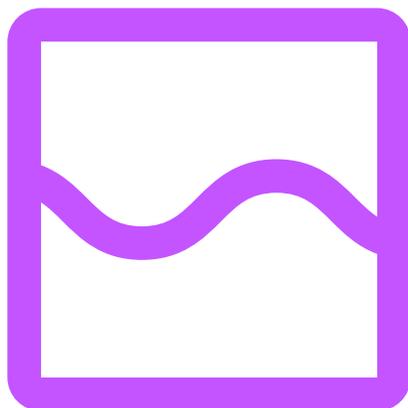


Go to                                                                   Data Flow ⊞ Projects .

**2.**
Select the Project you want to edit and click ⋮ More Edit Project .

**3.** Modify the Project name and/or Project description.

**4.** Click Apply Changes.

# Managing access to a Project

You can grant and revoke access to Projects where you have DFProjectAdmin permission.

**Before you begin**

- Make sure that you have DFProjectAdmin permission for the project you want to manage to perform this task.
- Make sure that you have IAMViewer or IAMUser permission for the tenant where you want to perform this task. Without one of those, users and groups will not be visible to you.

**Procedure**

**1.**
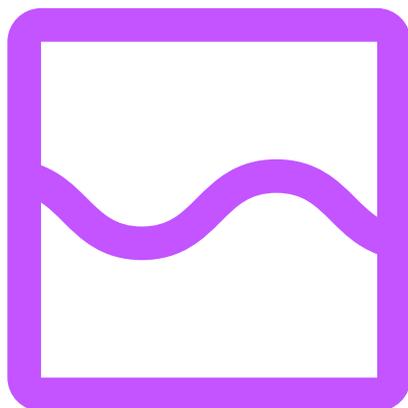


Go to                                                                   Data Flow ⊞ Projects .

**2.**
   Select the project where you want to manage access rights and click ⋮ More Manage Access .

   **a.** In the search box start typing the name of the user or group you want to add and select them from the list.
   **b.** Select the Resource Roles you want to grant.

   **a.** Click Update Roles next to the name of the user or group for which you want to revoke roles.
   **b.** Unselect the Resource Roles you want to revoke.
**3.** Click Update Roles.
**4.** Click Synchronize Users.

## Adding resources to a Project

You can add resources to Projects where you have DFProjectMember permission.

### Before you begin

- You must have DFProjectMember permission for the Project where you want to perform this task. For information on account and resource roles, see *Cloudera Data Flow authorization*.

### Procedure

**1.**
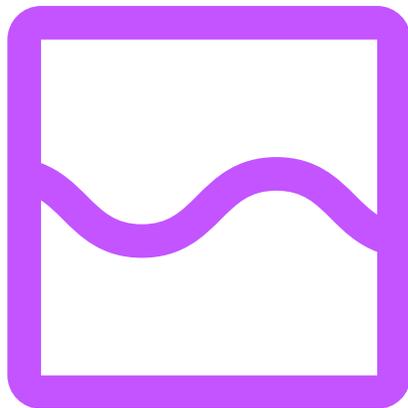


   Go to                                                    Data Flow ▥ Projects .
**2.**
   Select the project where you want to add resources and click ⋮ More View Workspace Manage Project Resources .

   The **Workspace Resources** view shows you all resources across Projects that you have access to.
**3.** Select the type of resource you want to reassign using the resource type tabs.
**4.**
   Select the resource you want to reassign and click ⋮ More Reassign .

   > 💡 **Tip:** Select several resources using the checkboxes and click the Reassign button for bulk resource reassignment.

**5.** In the **Reassign Resource** pop-up select an available Project or select Unassigned.
**6.** Click Reassign.

## Managing and reassigning resources to a Project

You can manage and reassign resources to Projects where you have DFProjectMember permission.

**Before you begin**

• You must have DFProjectMember permission for the Project where you want to perform this task. For information on account and resource roles, see *Cloudera Data Flow authorization*.

**Procedure**

**1.**
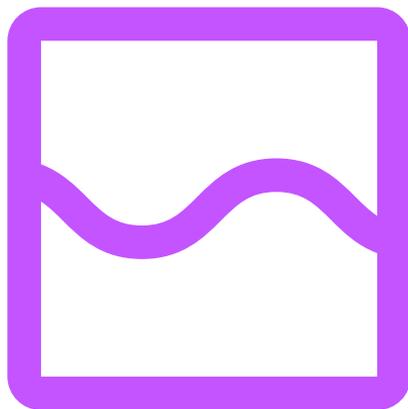


Go to                                                              Data Flow ⊞ Projects .

**2.**
Select the project where you want to manage resources and click ⋮ [Options] View Project Resources - Manage & Assign .

The ☁**Workspace Resources** view shows you resources filtered for the Project you selected.



> **Note:** After creating a Project, it needs to be synchronized before resources can be assigned. This may take a few minutes and during the synchronization, the new Project is not available in the Workspace Resources view yet.

**3.** Select the type of resource you want to reassign using the resource type tabs.

**4.**
Select the resource you want to reassign and click ⋮ More Reassign .

> **Tip:** Select several resources using the checkboxes and click the Reassign button for bulk resource reassignment.

**5.** In the **Reassign Resource** pop-up select an available Project or select Unassigned.

**6.** Click Reassign.

# Collections

A collection is a group of flow definitions that provides both sorting and access control within the Catalog.

Collections are a layer of role-based access control in Cloudera Data Flow. You may consider them as logical containers that you can use to govern access to flow definitions. Flow definitions in the Cloudera Data Flow Catalog are by default visible to all users with at least DFCatalogViewer role. Collections help you with sorting and compartmentalizing them for better visibility. Collections also provide fine grained, role-based access control over flow definitions within the Catalog, preventing accidental or malicious modification or deletion. To prevent accidental data loss, only empty collections may be deleted. Flow definitions may be assigned to one collection at a time, but they can be reassigned between collections.

ReadyFlows are a special kind of flow definition in the sense that they cannot be assigned to a collection. On the other hand, if you create a flow draft based on a ReadyFlow, edit it in Flow Designer and publish it as a new flow definition to the Catalog, this new flow definition can be assigned to a collection.

Flow definitions can have one of two states in the Catalog:

- Unassigned - the flow definition is not assigned to any particular collection, it is freely accessible for every user or group with the appropriate user role.
- Assigned to a collection - the flow definition is only accessible to users or groups with access to a particular collection. This assignment is exclusive, you cannot assign the same flow definition to more than one collection at a time.

The roles associated with collections are additive, they work in conjunction with user permissions controlling the types of actions a user or group is allowed to perform in a Cloudera on cloud environment.

Projects introduces the following user roles:

**DFCollectionsAdmin**

> This role grants permission to manage DataFlow Catalog collections within an tenant.

**DFCollectionsCreator**

> This role grants permission to create DataFlow Catalog collections. When creating a collection, they automatically become the DFCollectionAdmin in that collection.

**DFCollectionAdmin**

> This role is automatically assigned to users with DFCollectionsCreator role upon creating a collection. DFCollectionAdmins can add/remove users and groups, changing user and group roles (DFCollectionAdmin, DFCollectionMember, or DFCollectionViewer), modify the collection name and description, and delete the collection.

**DFCollectionMember**

> This role grants permission to publish, import, delete, view, and reassign Flow Definitions in a flow definition Catalog collection.

**DFCollectionViewer**

> This role grants read-only permissions on a specific flow definition Catalog collection.

The example in figure *Catalog roles example* represents a Cloudera Data Flow Catalog containing unassigned 'Flow definition 1', 'ReadyFlow 1' (ReadyFlows cannot be associated with flow definition collections), collections 'Collection_A' with 'Flow definition2' and 'Collection_B' with 'Flow definition 3' associated with them respectively.

Users with DFCatalogViewer role for Cloudera Data Flow Catalog and CollectionViewer role for 'Collection_A' are able to view 'Flow definition 2' in 'Collection_A', plus 'Flow definition 1' and 'ReadyFlow 1' because those are unassigned. They are unable to view flow definitions associated with 'Collection_B'.

**Figure 1: Catalog roles example**
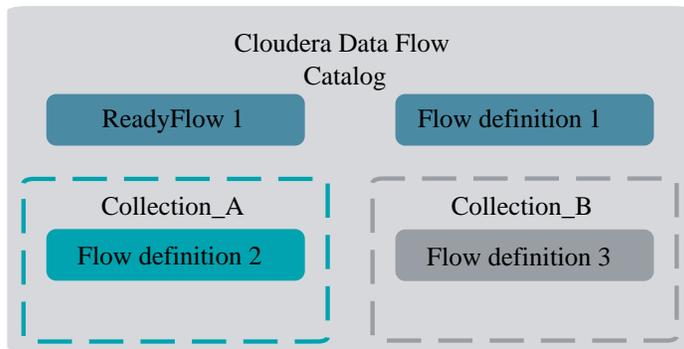
## Creating a collection

You can create a collection to limit the visibility of flow definitions within a Cloudera Data Flow service.

### Before you begin

- Make sure that you have DFCollectionsCreator permission to perform this task. For information on account and resource roles, see Cloudera Data Flow authorization.
- Cloudera Data Flow must be enabled for the Environment.

### Procedure

**1.**
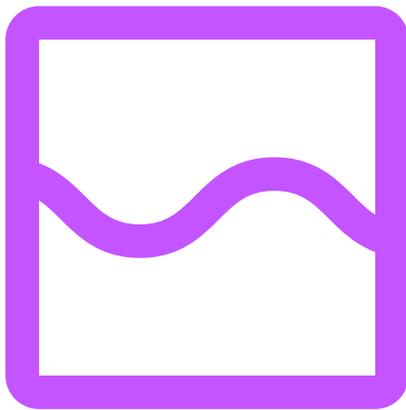


Go to                                                                Data Flow  Catalog .

**2.** Select the **Collections** tab.

**3.**
Click ⊕ Create Collection.

**4.** Provide Collection Name.

> **Note:** Collection names need to be unique within a service. The wizard indicates whether a name is valid by displaying a green check below the Collection Name text box.

**5.** Provide a collection Description.

**6.** Click Create.

**Related Information**
User Management

# Editing a collection

You can change the name and the description of collections where you have DFCollectionAdmin permission.

**Before you begin**

- Make sure that you have DFCollectionAdmin permission for the collection where you want to perform this task. For information on account and resource roles, see Cloudera Data Flow authorization.

**Procedure**

**1.**
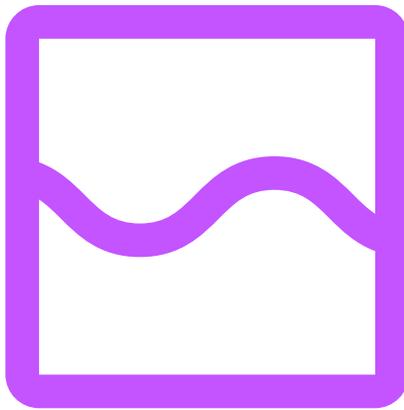


Go to                                                                    Data Flow ⊞ Catalog .

**2.** Select the **Collections** tab.

**3.**
Select the collection you want to edit and click ⋮

Edit Collection .

**4.** Modify the Collection Name and/or Description.

**5.** Click Apply Changes.

# Managing access to a collection

You can grant and revoke access to collections where you have DFCollectionAdmin permission.

**Before you begin**

- Make sure that you have DFCollectionAdmin permission for the collection you want to manage to perform this task.
- Make sure that you have IAMViewer or IAMUser permission for the tenant where you want to perform this task. Without one of those, users and groups will not be visible to you.

**Procedure**

**1.**
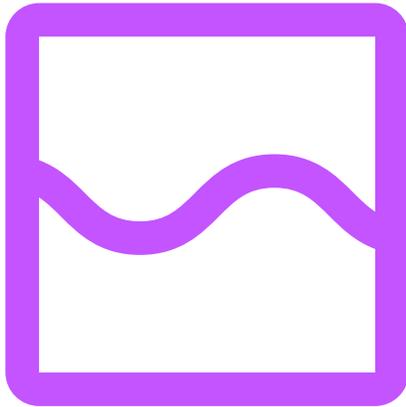


Go to                                                        Data Flow ⊞ Catalog .

**2.** Select the **Collections** tab.

**3.**
Select the collection where you want to manage access rights and click  ⋮  More Manage Access .

You are redirected to the Cloudera Management Console.

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**For Grant roles**

Ta assign roles ot a user or group:

**a.** In the search box start typing the name of the user or group you want to add and select them from the list.
**b.** Select the Resource Roles you want to grant.
**c.** Click Update Roles.

**For Revoke roles**

To revoke roles from a user or group:

**a.** Click Update Roles next to the name of the user or group for which you want to revoke roles.
**b.** Unselect the Resource Roles you want to revoke.
**c.** Click Update Roles.

---

# Deleting a collection

**Before you begin**

- Make sure you have the DFCollectionAdmin permission to perform this task. For information on account and resource roles, see *Cloudera Data Flow authorization*.

**About this task**

**Note:** Collections can only be deleted if there are no flow definitions associated with them.

**Procedure**

**1.**
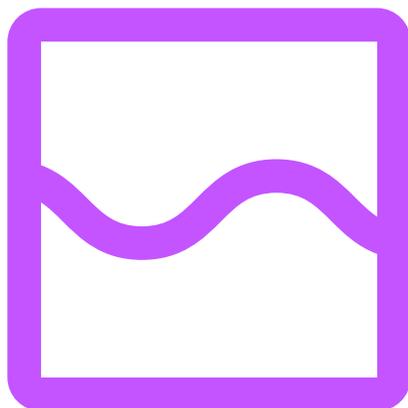


Go to                                                             Data Flow ⊞ Catalog .

**2.** Select the **Collections** tab.

**3.**
Select the collection you want to delete and click  ⋮ [Options] 🗑 Delete .

If there are flow definitions associated with the collection, you receive a warning message and the confirmation button remains inactive. Remove all flow definitions from the collection and then proceed with deletion.

If there are no flow definitions associated with the collection, the Delete button becomes active.

**4.** Click Delete to confirm.