

CDP Data Center 7.1.1

Schema Registry Authorization

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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 three horizontal bars.

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Schema Registry Authorization through Ranger Access Policies

User and group access to various Schema Registry functions is controlled through Apache Ranger.

Pre-defined access policies for Schema Registry allow the administrator to quickly add a user or user group to specify:

- Who can add/evolve schemas to a schema metadata.
- Who can view and edit schemas within a schema metadata.
- Who can upload the ser/des jar files.

If a higher level of granularity is necessary, the administrator can create an access policy and add the user or user-group to this custom policy.

Related Information

[Pre-defined Access Policies for Schema Registry](#)

[Add the user or group to a pre-defined access policy](#)

[Create a Custom Access Policy](#)

Pre-defined Access Policies for Schema Registry

Based on a user's responsibilities, you can add users or a user group to one or more of the following pre-defined access policies for Schema Registry and you can specify the type of permission such as Create, Read, Update, and Delete.

The following image shows the pre-defined access policies for Schema Registry:

| Policy ID | Policy Name | Policy Labels | Status | Audit Logging | Roles | Groups | Users | Action |
|-----------|---|---------------|---------|---------------|-------|--------|------------------------------------|----------|
| 3 | all - serde | -- | Enabled | Enabled | -- | -- | streamsmgngnr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 5 | all - schema-group, schema-metadata | -- | Enabled | Enabled | -- | -- | streamsmgngnr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 6 | all - schema-group, schema-metadata, schema-... | -- | Enabled | Enabled | -- | -- | streamsmgngnr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 7 | all - registry-service | -- | Enabled | Enabled | -- | -- | streamsmgngnr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 8 | all - schema-group, schema-metadata, schema-... | -- | Enabled | Enabled | -- | -- | streamsmgngnr kafka schemaregistry | 👁️ ✎️ 🗑️ |

The following table describes the pre-defined access policies for Schema Registry:

| Access Policy | Description |
|--|---|
| all - serde | Allows users to store metadata for the format of how data should be read and how it should be written. Users can store JAR files for serializers and deserializers and then map the serdes to the schema. |
| all - schema-group, schema-metadata | Allows users to access the schema groups and schema metadata. |
| all - schema-group, schema-metadata, schema-branch | Allows users to access the schema groups, schema metadata, and schema branch. |
| all - registry-service | Allows users to access the schema registry service. If a user is added to this policy, the user can access all Schema Registry entities. |
| all - schema-group, schema-metadata, schema-branch, schema-version | Allows users to access the schema groups, schema metadata, schema branch, and schema version. |

Related Information

[Schema Registry Authorization through Ranger Access Policies](#)

[Add the user or group to a pre-defined access policy](#)

[Create a Custom Access Policy](#)

Add the user or group to a pre-defined access policy

When an authenticated user attempts to view, create, edit, or delete a Schema Registry entity, the system checks whether the user has privileges to perform that action. These privileges are determined by the Ranger access policies that a user is associated with.

About this task

Determine the permissions required by a user or user group and accordingly add the user or group to the appropriate pre-defined access policy.

Each pre-defined access policy controls access to one or more Schema Registry entities.

Procedure

1. From the Cloudera Manager home page, click the Ranger link.
The **Ranger** management page appears.
2. Click the Ranger Admin Web UI link.

The screenshot shows the Cloudera Manager interface for a cluster named 'Cluster 1'. The main heading is 'RANGER-1' with a status indicator (green checkmark) and an 'Actions' dropdown menu. Below this, there are tabs for 'Status', 'Instances', 'Configuration', 'Commands', 'Charts Library', 'Audits', and 'Ranger Admin Web UI' (which is highlighted with an orange box). To the right of these tabs is a 'Quick Links' dropdown. The main content area is divided into three sections: 'Health Tests' with a 'Create Trigger' button and a 'Show 3 Good' indicator; 'Status Summary' with a table listing services and their health; and 'Charts' with an 'Informational Events' chart showing a bar at 03:45 and 04 PM.

| Service | Health |
|-----------------|---------------|
| Ranger Admin | 1 Good Health |
| Ranger Tagsync | 1 Good Health |
| Ranger Usersync | 1 Good Health |
| Hosts | 1 Good Health |

The **Ranger Log In** page appears.

3. Enter your user name and password to log in.
The **Ranger Service Manager** page appears.

The page is organized by service. Each cluster is listed under its respective service. For example, the Schema Registry clusters in the environment are listed under Schema Registry.

- Select a cluster from the Schema Registry section.
The **List of Policies** page appears.

The screenshot shows the Ranger Access Manager interface. The breadcrumb trail is 'Service Manager > cm_schema_registry Policies'. The page title is 'List of Policies : cm_schema_registry'. There is a search bar and an 'Add New Policy' button. Below is a table with the following data:

| Policy ID | Policy Name | Policy Labels | Status | Audit Logging | Roles | Groups | Users | Action |
|-----------|--|---------------|---------|---------------|-------|--------|----------------------------------|----------|
| 3 | all - serde | -- | Enabled | Enabled | -- | -- | streamsmgmr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 5 | all - schema-group, schema-metadata | -- | Enabled | Enabled | -- | -- | streamsmgmr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 6 | all - schema-group, schema-metadata, schema... | -- | Enabled | Enabled | -- | -- | streamsmgmr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 7 | all - registry-service | -- | Enabled | Enabled | -- | -- | streamsmgmr kafka schemaregistry | 👁️ ✎️ 🗑️ |
| 8 | all - schema-group, schema-metadata, schema... | -- | Enabled | Enabled | -- | -- | streamsmgmr kafka schemaregistry | 👁️ ✎️ 🗑️ |

- Click the ID for a policy.
The **Edit Policy** page appears.
- In the Allow Conditions section, add the user or group to the respective Select User or Select Group field.

The screenshot shows the 'Allow Conditions' section. It includes a 'hide' link and a table with the following columns and content:

| Select Role | Select Group | Select User | Policy Conditions | Permissions | Delegate Admin |
|--------------|---------------|--|--|---|--|
| Select Roles | Select Groups | <input type="checkbox"/> streamsmgmr <input type="checkbox"/> kafka <input type="checkbox"/> schemaregistry | Add Conditions <input type="button" value="+"/> | <input type="button" value="Create"/> <input type="button" value="Read"/> <input type="button" value="Update"/> <input type="button" value="Delete"/> | <input checked="" type="checkbox"/> <input type="button" value="x"/> |

- From the Policy Conditions field, enter the appropriate IP address.
- From the Permissions field, select the appropriate permission.
- Click Save.

Results

The user now has the rights according to the policy and the permission you assigned to the user. These rights apply to all objects in the entities unless you specified otherwise in the Policy Conditions field.

Related Information

[Schema Registry Authorization through Ranger Access Policies](#)

[Pre-defined Access Policies for Schema Registry](#)

[Create a Custom Access Policy](#)

Create a Custom Access Policy

You can create a custom access policy for a specific Schema Registry entity, specify an access type, and add a user or user-group to the policy.

Before you begin

Determine the following information:

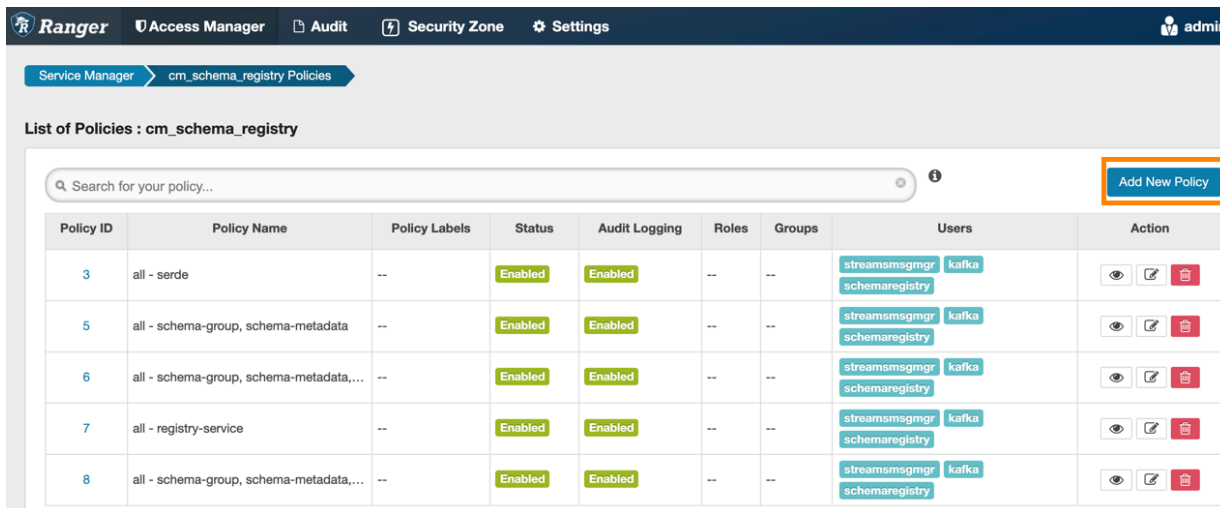
- The schema registry entity that the user needs access to.
- Whether the user requires all objects in the entity or specific objects.
- Whether the user needs read, view, edit, or delete permissions to the entity.
- If there are any IP addresses to include or exclude from the user's access.

About this task

With a custom policy you can specify the Schema Registry entity and the type of access the user requires.

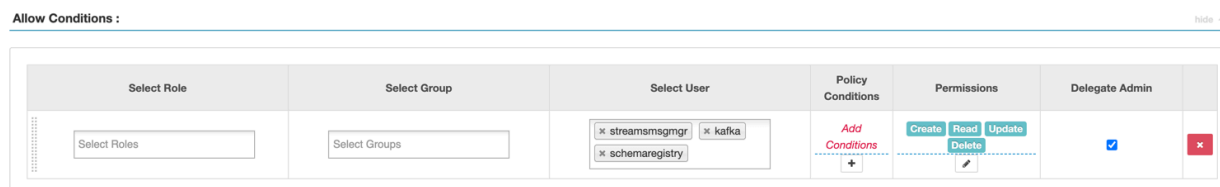
Procedure

1. Go to the **Ranger List of Policies** page.
2. Click Add New Policy.



The **Create Policy** page appears.

3. Enter a unique name for the policy.
4. Optionally, enter a keyword in the Policy Label field to aid in searching for a policy.
5. Select a Schema Registry entity. You can choose the Schema Registry service, schema group, or serde. Then, do one of the following tasks:
 - If you want the user to access all the objects in the entity, enter *.
 - If you want to specify the objects in the entity that a user can access, enter the name of the object in the text field.
6. Optionally, enter a description.
7. In the Allow Conditions section, add the user or group to the respective Select User or Select Group field.



8. Optionally, from the Policy Conditions field, enter the appropriate IP address.
9. From the Permissions field, select the appropriate permission.
10. Click Save.

Results

The user now has the rights according to the policy and the permission you assigned to the user.

Related Information

- [Schema Registry Authorization through Ranger Access Policies](#)
- [Pre-defined Access Policies for Schema Registry](#)
- [Add the user or group to a pre-defined access policy](#)