

2.0.1

Cloudera Flow Management Deployment

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CLouDERA

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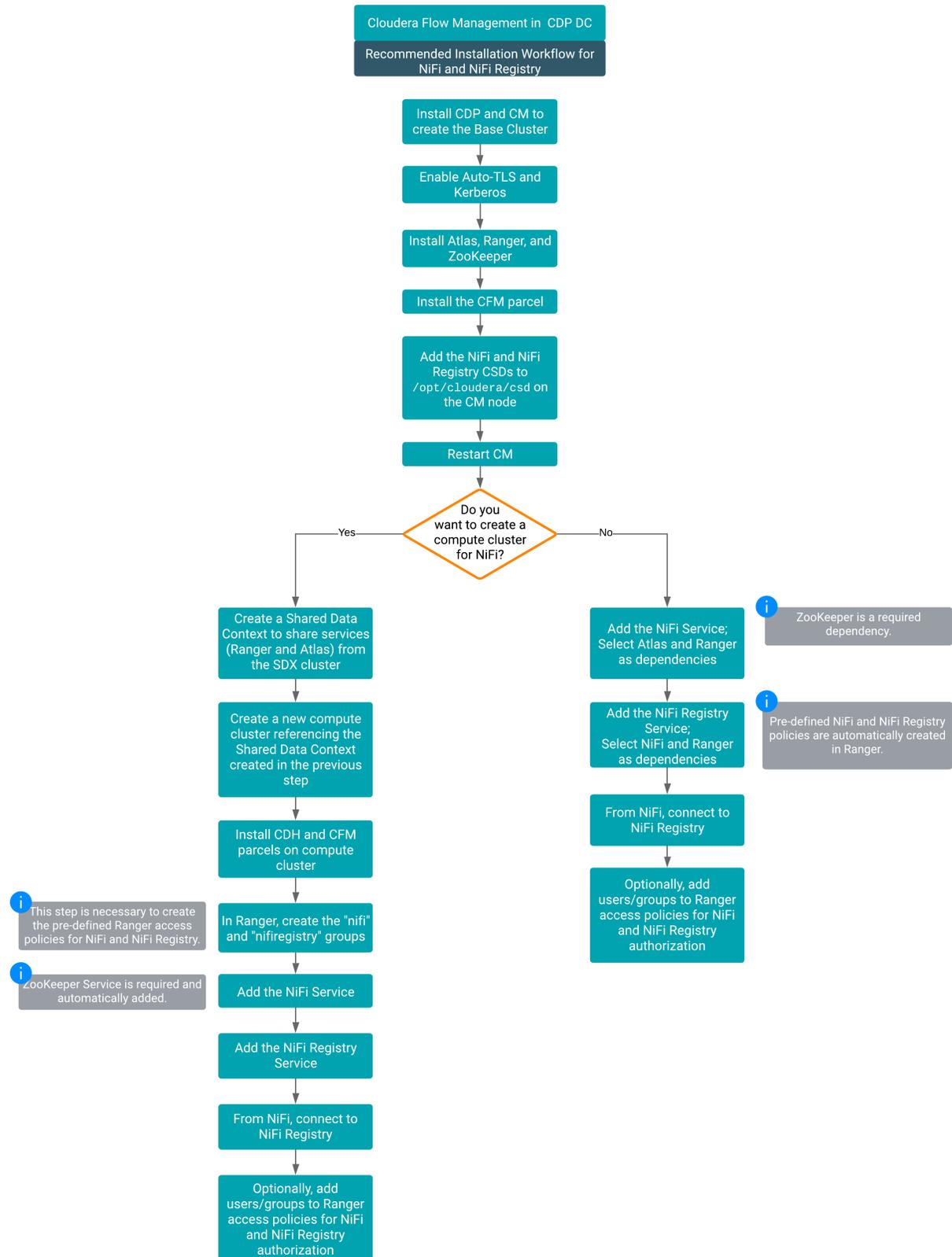
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CFM deployment workflow

Before you get started with your Cloudera Flow Management deployment, it is helpful to understand the steps involved.



rect 1218, 350, 1911, 1552 [Link to Prepare your CDP Data Center environment](#)

rect 1297, 1613, 1837, 1937 [Link to Understand your deployment scenario](#)

rect 1850, 2017, 2495, 3236 [Link to Install NiFi on your Base cluster](#)

rect 585, 2008, 1300, 4105 [Link to Install NiFi on a Compute cluster](#)

Understand your deployment scenario

There are two main CFM 2.0.1 installation scenarios and it is helpful to understand the difference between them before you get started with your CFM deployment.

Install NiFi on a base cluster

A Base cluster, sometimes also called a Regular cluster in Cloudera Manager, is a large cluster that contains SDX services like Ranger and Atlas, as well as compute and storage services like NiFi, Impala, and Hive.

**Tip:**

Cloudera recommends that you always install NiFi Registry on your Base cluster.

Installing NiFi on your Base cluster is a simplified deployment during which you create only one cluster. You can do this if you are deploying one cluster in trial deployments or in simple production scenarios.

Install NiFi on a compute cluster

A Compute cluster consists exclusively of compute nodes. A Compute cluster is then connected to a Base cluster with SDX services like Ranger and Atlas, using a Shared Data Context.

Installing NiFi on a Compute cluster is recommended when you want to deploy multiple NiFi clusters for larger scale production deployments, when you want to isolate your dataflows, when you want to have different authorization models per dataflow, and other similar deployment scenarios.

Review *CFM deployment workflow* to understand the steps required for each scenario.

Related Information

[CFM deployment workflow](#)

Prepare your CDP Private Cloud Base cluster

You should complete the following steps to prepare your CDP Private Cloud Base cluster.

Install the JDK

You should install JDK on each machine on which you will install NiFi, if your version of Cloudera Manager is not already configured with JDK.

About this task

The following Java versions are supported:

- Java 1.8
- Java 1.11



Note: Java 11.0.8 or later is supported.

Procedure

1. Download JDK from the appropriate website.

2. Run the installation command appropriate for your operating system:

For RHEL/CentOS:

```
yum install java-1.8.0-openjdk-devel
```

What to do next

Once you have installed the JDK, ensure that you have the required database installed and set up for NiFi Registry.

Related Information

[Open JDK Download](#)

[Oracle JDK Download](#)

Install and configure a database for NiFi Registry

If you are installing NiFi Registry, you can install and configure an external MySQL or PostgreSQL database. By default, NiFi Registry is pre-configured to use an embedded H2 database.

H2 is an embedded database that is preconfigured in the default `nifi.registry.properties` file. The contents of the H2 database are stored in a file on your local file system. The H2 database location is specified as part of the JDBC URL property:

- NiFi Registry JDBC Url (`nifi.registry.db.url`) – `jdbc:h2:./database/nifi-registry-primary`

If you plan to use the H2 embedded database, you can skip the steps for installing and configuring an external database. Alternately, you may install a MySQL or PostgreSQL external database. To do this, review the following steps for either MySQL or PostgreSQL.

For a list of supported MySQL or PostgreSQL databases, see [Supported NiFi Registry databases](#).

Install MySQL

Learn how to install a MySQL external database for NiFi Registry.

About this task

If you have already installed a PostgreSQL database, you may skip these steps. Both databases are not required.

For a list of supported MySQL databases, see [Supported NiFi Registry databases](#).

Procedure

1. Log in to the node on which you want to install NiFi Registry.
2. Install MySQL and the MySQL community server, and start the MySQL service:

```
yum localinstall \
https://dev.mysql.com/get/mysql57-community-release-el7-8.noarch.rpm
yum install mysql-community-server
systemctl start mysqld.service
```

3. Obtain the randomly generated MySQL root password:

```
grep 'A temporary password is generated for root@localhost' \
/var/log/mysqld.log |tail -1
```

4. Reset the MySQL root password. Enter the following command. You are prompted for the password you obtained in the previous step. MySQL then asks you to change the password:

```
/usr/bin/mysql_secure_installation
```

What to do next

Once you have completed the MySQL installation, configure it for use with NiFi Registry.

Configuring NiFi Registry Metadata Stores in MySQL

Learn how to configure a MySQL database for use with NiFi Registry.

About this task

MySQL provides the option to use an externally located database that supports high availability.

Procedure

1. Download the MySQL JDBC driver and place it somewhere accessible to NiFi Registry:

```
/path/to/drivers/mysql-connector-java-8.0.16.jar
```

2. Create a database inside MySQL (enter mysql shell using `mysql -u root -p`):

```
CREATE DATABASE nifi_registry;
```

3. Create a database user and grant privileges (for remote users, use `nifireg'@'<IP-ADDRESS>` or `nifireg'@'%'` for any remote host):

```
GRANT ALL PRIVILEGES ON nifi_registry.* TO 'nifireg'@'localhost' IDENTIFIED BY 'changeme';
```

4. After NiFi Registry service is installed, configure the database properties in Cloudera Manager:

- NiFi Registry JDBC Url (`nifi.registry.db.url`) – `jdbc:mysql://<MYSQL-HOSTNAME>/nifi_registry`
- NiFi Registry JDBC Driver (`nifi.registry.db.driver.class`) – `com.mysql.cj.jdbc.Driver`
- NiFi Registry H2 directory storage location (`nifi.registry.db.driver.directory`) – `/path/to/drivers`



Note:

The NiFi Registry H2 directory storage location field specifies the NiFi Registry database driver directory. The H2 database is used by default. Update this field when you are configuring it for an external database.

- NiFi Registry Database Username (`nifi.registry.db.username`) – `nifireg`
- NiFi Registry Database Password (`nifi.registry.db.password`) – `changeme`

What to do next

When you have completed the NiFi Registry database configuration, move on to installing Cloudera Manager and your CDP Private Cloud Base cluster.

Install PostgreSQL

Learn how to install a PostgreSQL external database for use with NiFi Registry.

About this task

If you have already installed a MySQL database, you may skip these steps. Both databases are not required.

For a list of supported PostgreSQL databases, see [Supported NiFi Registry databases](#).

Procedure

1. Install Red Hat Package Manager (RPM) according to the requirements of your operating system:

```
yum install https://yum.postgresql.org/9.6/redhat/rhel-7-x86_64/pgdg-redhat96-9.6-3.noarch.rpm
```

2. Install Postgres version 9.x or 10.x:

```
yum install postgresql96-server postgresql96-contrib postgresql96
```

3. Initialize the database.

For CentOS 7, use the following syntax:

```
/usr/pgsql-9.6/bin/postgresql96-setup initdb
```

4. Start Postgres.

For example, if you are using CentOS 7, use the following syntax:

```
systemctl enable postgresql-9.6.service
systemctl start postgresql-9.6.service
```

5. Verify that you can log in:

```
sudo su postgres
psql
```

What to do next

Once you have installed PostgreSQL, configure the database for use with NiFi Registry.

Configuring NiFi Registry Metadata Stores in PostgreSQL

Learn how to configure a PostgreSQL database for use with NiFi Registry.

About this task

Postgres provides the option to use an externally located database that supports high availability.

Procedure

1. Download the Postgres JDBC driver and place it somewhere accessible to NiFi Registry:

```
/path/to/drivers/postgresql-42.2.2.jar
```

2. Create a database inside Postgres:

```
createdb nifireg
```

3. Create a database user and grant privileges:

```
psql nifireg
CREATE USER nifireg WITH PASSWORD 'changeme';
GRANT ALL PRIVILEGES ON DATABASE nifireg to nifireg;
\q
```

4. After NiFi Registry service is installed, configure the database properties in Cloudera Manager:
 - NiFi Registry JDBC Url (nifi.registry.db.url) – jdbc:postgresql://<POSTGRES-HOSTNAME>/nifireg
 - NiFi Registry JDBC Driver (nifi.registry.db.driver.class) – org.postgresql.Driver
 - NiFi Registry H2 directory storage location (nifi.registry.db.driver.directory) – /path/to/drivers

**Note:**

The NiFi Registry H2 directory storage location field specifies the NiFi Registry database driver directory. The H2 database is used by default. Update this field when you are configuring it for an external database.

- NiFi Registry Database Username (nifi.registry.db.username) – nifireg
- NiFi Registry Database Password (nifi.registry.db.password) – changeme

What to do next

When you have completed the NiFi Registry database configuration, move on to installing Cloudera Manager and your CDP Private Cloud Base.

Install Cloudera Manager and a CDP Private Cloud Base cluster

Learn about the basic requirements for installing Cloudera Manager and CDP Private Cloud Base.

About this task

You should follow the instructions in the *CDP Installation Guide* for complete information about installing Cloudera Manager and a CDP Base cluster. At minimum, you should ensure that you perform the following steps.

Before you begin

- You have installed a JDK
- If you want to use an external database, you have installed and configured it for NiFi Registry.

Procedure

1. Install CDP Private Cloud Base 7.1.1.
2. Enable Auto-TLS and Kerberos.

Cloudera recommends the following security configuration:

- Enable Auto-TLS.
- Enable Kerberos.
- Use Apache Atlas for dataset level lineage graphs.
- Use Apache Ranger to authorize NiFi and NiFi Registry users.

For details on security recommendations and options, see *CFM Security*.

**Note:**

Wildcard certificates are not supported.

- If NiFi or NiFi Registry is behind Knox, do not use wildcard certificates for Knox.
- Do not generate wildcard certificates for the NiFi nodes. For example, if two nodes, node1.nifi.apache.org and node2.nifi.apache.org, are assigned the same certificate with a CN or SAN entry of *.nifi.apache.org, this certificate will not be supported.

For more information on certificate requirements, see *TLS certificate requirements and recommendations*.

3. Install the following Runtime services, at minimum:

- Atlas
- Ranger
- ZooKeeper

What to do next

When you have completed the CDP Private Cloud Base cluster installation, add the CFM parcel and CSD files.

Related Information

[CDP Data Center Installation Guide](#)

[CFM Security](#)

[TLS certificate requirements and recommendations](#)

Install the CFM parcel from the repository

Install the CFM parcel to make NiFi and NiFi Registry available for installation. To install the CFM parcel to Cloudera Manager, you must update the Parcel URL, and then download, distribute and activate the CFM parcel.

Before you begin

- You have installed a JDK.
- You have installed and configured a database for use with NiFi Registry.
- You have installed a CDP Private Cloud Base cluster.

Procedure

1. Navigate to the Parcels page.
2. From the navigation bar click **Hosts** **Parcels** and click **Parcel Repository & Network Settings**.
3. On the Parcel Repository & Network Settings page, click **+** to add an additional row in the Remote Parcel Repository URLs list.
4. Add the URL of the CFM parcel you want to install.

See *Download Locations* for a complete list of parcels.

For example:

```
https://archive.cloudera.com/p/CFM/centos7/2.x/updates/2.0.1.0/tars/parcel1/CFM-2.0.1.0-71-e17.parcel
```

5. Click **Save & Verify Configuration**.
6. Click **Close**.

The new CFM parcel displays with the set of parcels available for download on the Parcels page.

7. From the Parcels page, download, distribute, and activate the CFM parcel.

What to do next

When you have finished downloading, distributing and activating the CFM parcel, add the CSD files for use by Cloudera Manager Server.

Related Information

[Download locations](#)

Download the CFM Custom Service Descriptor files

A Custom Service Descriptor (CSD) file contains configuration information needed to describe and manage a new service. Download the CSDs for each CFM Service, specify ownership and permissions, and then restart the Cloudera Manager Server.

Procedure

1. Download the CSDs for NiFi and NiFi Registry and put them into `/opt/cloudera/csd`.
You can download the files from the CFM repository. See *Download Locations*.



Important:

Ensure that the CSD version is the same as the CFM version. Different CSD and CFM versions can cause problems when configuring and managing NiFi through Cloudera Manager.

2. Change the CSD owner. In `opt/cloudera/csd`, enter:

```
chown cloudera-scm:cloudera-scm ./*
chmod 644 ./*
```

3. Restart the Cloudera Manager Server.

```
sudo service cloudera-scm-server restart
```

4. Restart the Cloudera Management Service. From the Cloudera Manager Status tab, select Restart from the Cloudera Management Service drop-down.

What to do next

When you have finished adding the CSD files, you have completed your CDP Private Cloud Base installation. You can now proceed with installing, securing, and configuring CFM.

Review *CFM deployment workflow* and *Understand your deployment scenario* for help deciding whether to install NiFi on a Base cluster or on a Compute cluster. Then follow the tasks outlined in *Install NiFi on your Base cluster* or *Install NiFi on a Compute cluster*.

Related Information

[Download locations](#)

[CFM deployment workflow](#)

[Understand your deployment scenario](#)

[Install NiFi on your Base cluster](#)

[Install NiFi on a Compute cluster](#)

Install NiFi on your Base cluster

Provides the steps to add and configure NiFi and NiFi Registry to a CDP Private Cloud Base Base cluster.

Add the NiFi service

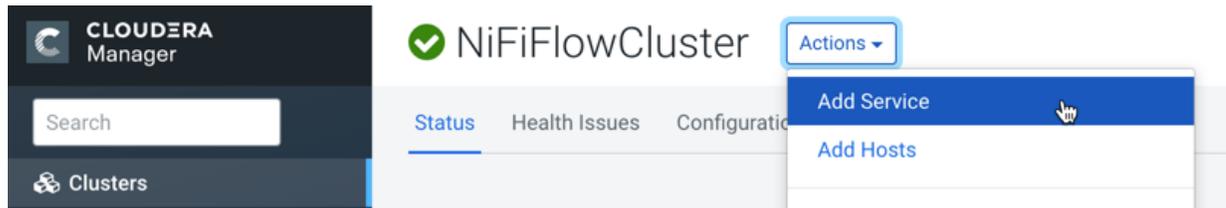
Provides the steps for adding and configuring the NiFi service to a CDP Private Cloud Base cluster.

Before you begin

You have installed a CDP Private Cloud Base cluster.

Procedure

1. From Home > Status tab, select the drop-down to the right of your cluster, and select Add Service. Install one service at a time.



2. Specify that you want to add the NiFi service and click Continue to display the Add Service wizard.
3. Select NiFi dependencies and click Continue.
 - ZooKeeper is a required dependency.
 - Cloudera recommends that you also select Ranger and Atlas dependencies.
4. Assign Roles to your NiFi service.
Select the hosts onto which you want to install your new NiFi roles. Click Continue.
5. Review changes to your configuration. Click Continue. This will start the service installation.
Provide a value for your Initial Admin Identity. You may choose to further customize your NiFi configuration here.



Note:

You must add any group name or identity set by these three parameters to Ranger, in order for your installation install to succeed.

- Initial Admin Identity (nifi.initial.admin.identity)
 - NiFi proxy group (nifi.proxy.group)
 - Initial Admin Groups (nifi.initial.admin.groups)
6. Click Continue and Finish to complete the installation.

Results

Verify the new service is added properly by checking the health status for the new service. If the Health Status is Good, then the service added properly.

What to do next

When you have finished adding the NiFi service, proceed with adding the NiFi Registry service.

Add the NiFi Registry service

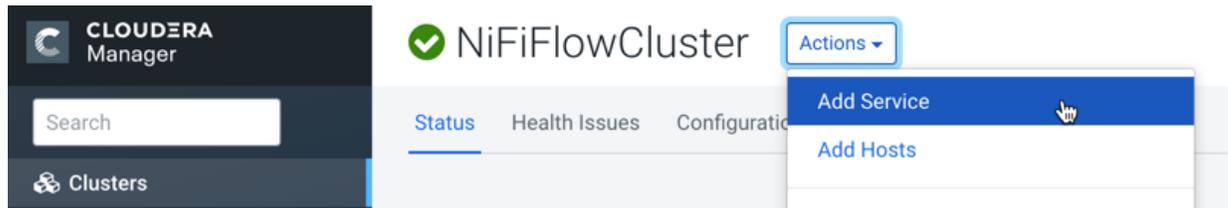
Provides the steps for adding and configuring the NiFi Registry service.

Before you begin

You have added the NiFi Service to a cluster.

Procedure

1. From Home > Status tab, select the drop-down to the right of your cluster, and select Add a Service. Install one service at a time.



2. Specify that you want to add the NiFi Registry service and click Continue to display the Add Service wizard.
3. Select NiFi Registry dependencies and click Continue.

Cloudera recommends that you select NiFi and Ranger dependencies.



Note:

NiFi Registry does not require any dependencies. However, if you select No Optional Dependencies, some services are still selected as dependencies. You can deselect unwanted dependencies once you have finished the installation.

4. Assign Roles to your NiFi Registry service.
Select the host onto which you want to install your new NiFi Registry role. Click Continue.
5. Review changes to your configuration. Click Continue to start the service installation.

Provide a value for your Initial Admin Identity. You may choose to further customize your NiFi configuration here.



Note:

You must add any group name or identity set by these three parameters to Ranger, in order for your installation install to succeed.

- Initial Admin Identity (nifi.registry.initial.admin.identity)
- NiFi Registry proxy group (nifi.registry.proxy.group)
- Initial Admin Groups (nifi.registry.initial.admin.groups)

6. Click Continue and Finish to complete the installation.

Results

Verify the new service is added properly by checking the health status for the new service. If the Health Status is Good, then the service added properly.

What to do next

When you have finished adding the NiFi Registry service, proceed by connecting NiFi to NiFi Registry.

Connect NiFi to NiFi Registry

Learn about the steps to configure NiFi to identify the NiFi Registry so that you can support versioned flows in Cloudera Flow Management.

Before you begin

- You have added and configured NiFi and NiFi Registry.
- You have started both NiFi and NiFi Registry.

Procedure

1. From the NiFi UI, select Controller Settings from the Global Menu.
2. Select the Registry Clients tab.
3. Click the Add icon (+) to launch the Add Registry Client dialog.
4. Add the name and URL location of the NiFi Registry service you just created.

Results

NiFi Settings

GENERAL				REPORTING TASK CONTROLLER SERVICES				REPORTING TASKS				REGISTRY CLIENTS			
												+			
Name ^				Location				Description							
NiFi Registry				https://cfm-node-3.cloudera.com:18433								✎ 🗑			

What to do next

Once you have connected NiFi and NiFi Registry, complete additional post-installation configuration steps to complete your installation.

Add users or groups to Ranger policies

Provides steps to add users or groups to Ranger Policies.

About this task

Determine what the user can command, control, and observe in a NiFi dataflow or in NiFi Registry and accordingly add the user or a group of users to the appropriate pre-defined Ranger access policies.

Each pre-defined Ranger access policy confers specific rights to NiFi or NiFi Registry resources.

For more information, see:

- *Pre-defined Ranger access policies for NiFi resources*
- *Pre-defined Ranger access policies for NiFi Registry resources*

Before you begin

- You have installed Ranger on your Base CDP Private Cloud Base cluster.
- You have added and connected the NiFi and NiFi Registry services.

Procedure

- From the Base cluster, select Ranger from the list of services. Click Ranger Admin Web UI and log into Ranger. The **Ranger Service Manager** page displays.

The screenshot shows the Ranger Service Manager interface. At the top, there are navigation tabs: Access Manager, Audit, Security Zone, and Settings. The main area displays a grid of service cards. Each card represents a service and its associated cluster. The services shown are HDFS, HBASE, HADOOP SQL, YARN, KNOX, SOLR, KAFKA, NIFI, NIFI-REGISTRY, ATLAS, ADLS, KUDU, and OZONE. Each card has a plus icon for adding, a pencil icon for editing, and a trash icon for deleting. The NIFI card is highlighted, indicating it is the selected service.

Each cluster in the environment is listed under its respective service. For example, the NiFi clusters in the environment are listed under NiFi.

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

The screenshot shows the Ranger List of Policies page for Cluster 1_nifi. The page has a search bar at the top and an 'Add New Policy' button. Below the search bar is a table with the following columns: Policy ID, Policy Name, Policy Labels, Status, Audit Logging, Roles, Groups, Users, and Action. The table contains 10 rows of policy information.

Policy ID	Policy Name	Policy Labels	Status	Audit Logging	Roles	Groups	Users	Action
41	Restricted Components	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
42	Provenance	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
43	Flow	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
44	Tenants	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
45	Controller	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
46	Policies	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
47	Proxies	--	Enabled	Enabled	--	nifi	--	[Eye] [Pencil] [Trash]
48	Root Process Group	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
49	Root Process Group Provenance Data	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]
50	Root Process Group Data	--	Enabled	Enabled	--	nifi	admin	[Eye] [Pencil] [Trash]

- Click the ID for a policy.
The **Edit Policy** page appears.

Edit Policy

Policy Details :

Policy Type: **Access** Add Validity Period

Policy ID: **43**

Policy Name: Flow enabled normal

Policy Label:

NIFI Resource Identifier:

Description:

Audit Logging: **YES**

Allow Conditions : hide -

Select Role	Select Group	Select User	Permissions	Delegate Admin	
<input type="text" value="Select Roles"/>	<input type="text" value="nifi"/>	<input type="text" value="admin"/>	Read <input type="text"/>	<input type="checkbox"/>	<input type="button" value="x"/>
+					

Deny All Other Accesses: **False**

- In the Allow Conditions section, add the user or the user group to the Select User field.
- Click Save.

Results

The user now has the NiFi and NiFi Registry rights according to the policies you added the user or user group to. These rights are inherited down the hierarchy unless there is a more specific policy on a component.

What to do next

When you have completed the steps for adding users and groups to Ranger policies, review the steps to deselect unwanted NiFi Registry dependencies and determine whether this task applies to you.

Related Information

[Pre-defined Ranger access policies for Apache NiFi](#)

[Pre-defined Ranger access policies for Apache NiFi Registry](#)

Deselect unwanted NiFi Registry dependencies

Provides steps to remove unwanted NiFi Registry dependencies.

About this task

This is an optional task. During your cluster installation, some dependencies may have been added to NiFi Registry. If you do not want these dependencies, follow these steps to remove them.

Before you begin

- You have installed a CDP Private Cloud Base cluster.
- You have added the NiFi Registry service.

Procedure

1. From Cloudera Manager, click the Clusters tab in the left-hand navigation
2. Click NiFi Registry in the list of services to display the NiFi Registry service page.
3. Select the Configuration tab.
4. Deselect any unwanted dependencies.

The screenshot shows the NiFi Registry Configuration page. The left sidebar contains a 'Filters' section with categories like SCOPE, CATEGORY, and STATUS. The main content area displays a table of dependencies for the selected service (RANGER Service). The dependencies are:

Service	Dependency	Status
NiFi CA Service Service	NiFi Registry (Service-Wide)	<input type="checkbox"/> none
RANGER Service	NiFi Registry (Service-Wide)	<input checked="" type="checkbox"/> SDX
KNOX Service	NiFi Registry (Service-Wide)	<input type="checkbox"/> none
NiFi Service	NiFi Registry (Service-Wide)	<input checked="" type="checkbox"/> NiFi
Enable Kerberos Authentication	NiFi Registry (Service-Wide)	<input checked="" type="checkbox"/> NiFi Registry (Service-Wide)

5. Click Save Changes. Restart the NiFi Registry service.

What to do next

You have completed your CDP Private Cloud Base cluster and CFM installation.

Install NiFi on a Compute cluster

Provides the steps to add and configure NiFi and NiFi Registry to a CDP Private Cloud Base Compute cluster.

Create a Shared Data Context

Provides the steps to create a Shared Data Context.

Before you begin

- You have reviewed *Understand your deployment scenario* and have decided to install NiFi on a Compute cluster.
- You have prepared your CDP Private Cloud Base Base cluster.

- Your Base cluster has data, metadata, and security services to share.

Procedure

- From Cloudera Manager Home, click on your Base cluster name to go the Detail page.
- In the Data Contexts section, click Create.
- In the Create Data Context dialog, provide a Data Context Name, specify your Base cluster, and click Create.

Example

Create Data Context ✕

A Data Context, part of [Cloudera SDX \(Shared Data Experience\)](#), allows you to share data, metadata, and security services from a Base Cluster. You can then use it to create **separate Compute Clusters**.

Data Context Name

Base Cluster

Only version 5.15 or higher is supported.

Data Services

  HDFS

Metadata Services

  Hive

Security Services

  Atlas

  Ranger

Cancel

Create

What to do next

When you have finished creating a Shared Data Context, proceed to creating a Compute cluster.

Add the NiFi and NiFi Registry groups to Ranger in the Base cluster

Provides steps to add the NiFi and NiFi Registry groups in Ranger.

About this task



Note:

If the CFM parcel has been activated on the Base cluster, the nifi and nifi registry groups in Ranger are automatically created and you may skip this task.

If your Compute cluster uses a Shared Data Context that shares the Ranger service, you must create the nifi and nifi registry groups in Ranger on the Base cluster. You must create these groups before you install the NiFi and NiFi Registry service on the Compute cluster, in order for the required NiFi and NiFi Registry Ranger access policies to be created.

Before you begin

- You have created a Shared Data Context.

Procedure

1. Go to Ranger.
2. Select Settings > Users/Groups/Roles
The **Users/Groups/Roles** page appears.
3. Select the Groups tab, then click Add New Group.
The **Group Detail** page appears.
4. For Group Name, enter nifi. Click Save.
5. Click Add New Group.
6. For Group Name, enter nifiregistry. Click Save.

What to do next

When you have finished creating the Ranger groups, proceed to creating a Compute cluster.

Create a Compute cluster

Provides the steps to create a CDP Private Cloud Base Compute cluster.

About this task

You should follow the instructions in the *CDP Installation Guide* for complete information about installing Cloudera Manager and a CDP base cluster. At minimum, you should ensure that you perform the following steps.

Before you begin

- You have prepared your CDP Private Cloud Base Base cluster.
- You have created a Shared Data Context in your Base cluster.

Procedure

1. Launch the Add Cluster – Installation wizard.
From your Base cluster detail page, select Add Compute Cluster from the Actions drop-down.

- From the Cluster Basics step, add a cluster name, and select your Shared Data Context from the Data Context drop-down. Click Continue.

Add Cluster - Installation

- From the Specify Hosts step, select the hosts you want to belong to your Compute cluster. Click Continue.
- From the Select Repository step, select the CFM parcel. If the CFM parcel has not been added yet, select Parcel Repositories & Network Settings and add the CFM Parcel URL
See *Install the CFM parcel from the repository* for more information.
The CDH parcel is added by default. Click Continue to download, distribute, and activate the CFM and CDH parcels.
- From the Inspect Cluster step, run the Inspect Network Performance and Inspect Hosts inspections. Click Continue to select services to install.

What to do next

When you have finished creating your Compute cluster, proceed by adding the NiFi and NiFi Registry services.

Related Information

[CDP Private Cloud Base Installation Guide](#)

[CFM Security](#)

Add the NiFi and NiFi Registry services to a Compute cluster

Provides the steps for adding and configuring the NiFi and NiFi Registry services to a Compute cluster.

Before you begin

- You have created a Shared Data Context and a Compute cluster.
- You have added the nifi and nifiregistry groups to Ranger in the Base cluster.

- You have created a Compute cluster with CDH and CFM parcels installed.

Procedure

1. After your Compute cluster is created, the Add Cluster - Configuration wizard displays.
2. From the Select Services step, select Custom Services. Select NiFi and NiFi Registry. Click Continue.
3. From the Assign Roles step, select the hosts onto which you want to install your new NiFi roles and the host onto which you want to install your NiFi Registry role.

ZooKeeper is a required dependency of NiFi. Select the hosts onto which you want to install ZooKeeper. Click Continue.

4. From the Review Changes step, review changes to your configuration. For both NiFi and NiFi Registry, provide a value for your Initial Admin Identity. You may choose to further customize your NiFi and NiFi Registry configurations here.



Note:

You must add any group name or identity set by these parameters to Ranger, in order for your installation to succeed.

For NiFi:

- Initial Admin Identity (`nifi.initial.admin.identity`)
- NiFi proxy group (`nifi.proxy.group`)
- Initial Admin Groups (`nifi.initial.admin.groups`)

For NiFi Registry:

- Initial Admin Identity (`nifi.registry.initial.admin.identity`)
- NiFi Registry proxy group (`nifi.registry.proxy.group`)
- Initial Admin Groups (`nifi.registry.initial.admin.groups`)

Click Continue.

5. From the Configure Kerberos step, install Kerberos client libraries on all Compute cluster hosts as needed. Click Continue to initiate the Kerberos enablement.
6. When you have completed these steps for both NiFi and NiFi Registry, click Continue. This starts the NiFi and NiFi Registry services installation.
7. Click Continue and Finish to complete the installation.

Results

Verify the new services are added properly by checking the health status for the new services. If the Health Status is Good, then the services added properly.

What to do next

When you have finished adding the NiFi and NiFi Registry services, proceed by connecting NiFi to NiFi Registry.

Connect NiFi to NiFi Registry

Learn about the steps to configure NiFi to identify the NiFi Registry so that you can support versioned flows in Cloudera Flow Management.

Before you begin

- You have added and configured NiFi and NiFi Registry.
- You have started both NiFi and NiFi Registry.

Procedure

1. From the NiFi UI, select Controller Settings from the Global Menu.
2. Select the Registry Clients tab.
3. Click the Add icon (+) to launch the Add Registry Client dialog.
4. Add the name and URL location of the NiFi Registry service you just created.

Results

NiFi Settings

GENERAL				REPORTING TASK CONTROLLER SERVICES				REPORTING TASKS				REGISTRY CLIENTS			
												+			
Name ^				Location				Description							
NiFi Registry				https://cfm-node-3.cloudera.com:18433								✎ 🗑			

What to do next

Once you have connected NiFi and NiFi Registry, complete additional post-installation configuration steps to complete your installation.

Add users or groups to Ranger policies

Provides steps to add users or groups to Ranger Policies.

About this task

Determine what the user can command, control, and observe in a NiFi dataflow or in NiFi Registry and accordingly add the user or a group of users to the appropriate pre-defined Ranger access policies.

Each pre-defined Ranger access policy confers specific rights to NiFi or NiFi Registry resources.

For more information, see:

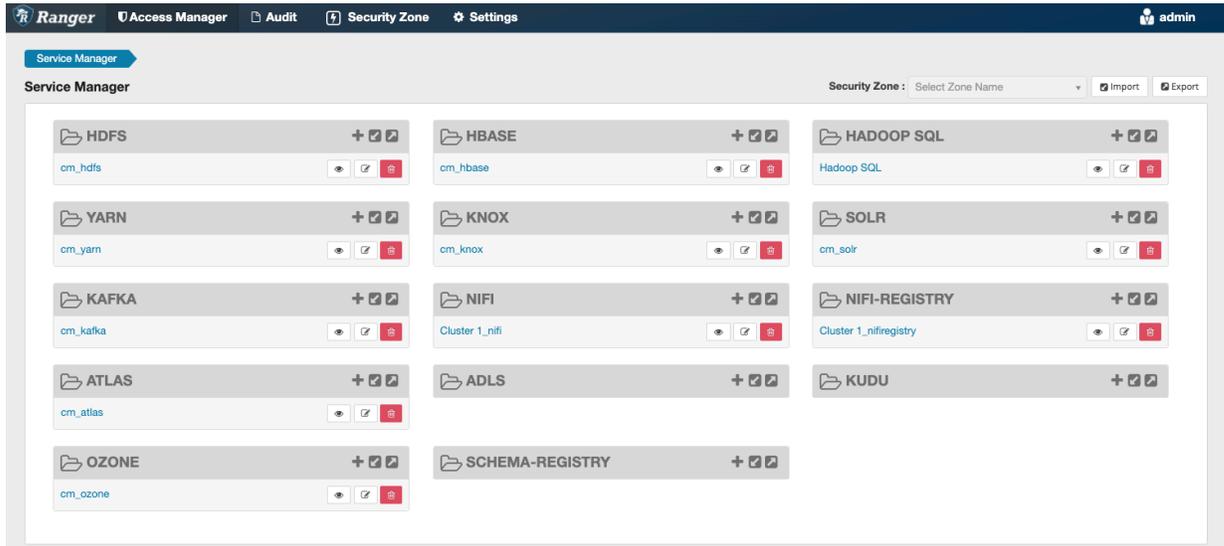
- *Pre-defined Ranger access policies for NiFi resources*
- *Pre-defined Ranger access policies for NiFi Registry resources*

Before you begin

- You have installed Ranger on your Base CDP Private Cloud Base cluster.
- You have added and connected the NiFi and NiFi Registry services.

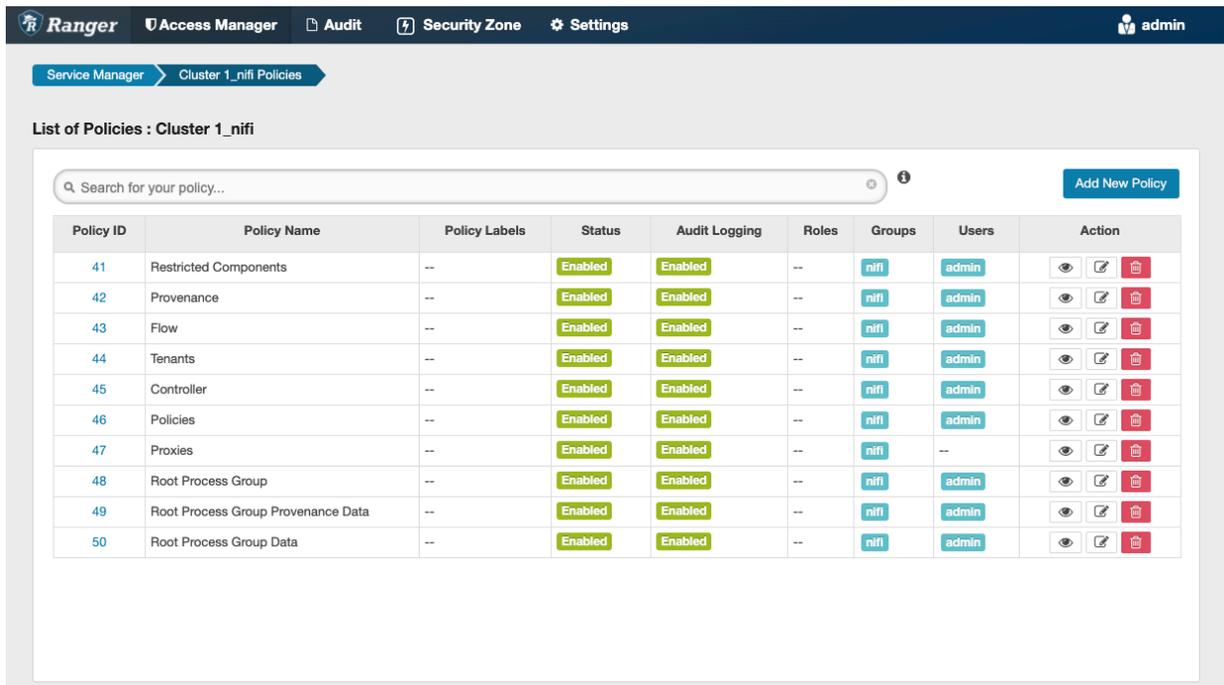
Procedure

- From the Base cluster, select Ranger from the list of services. Click Ranger Admin Web UI and log into Ranger. The **Ranger Service Manager** page displays.



Each cluster in the environment is listed under its respective service. For example, the NiFi clusters in the environment are listed under NiFi.

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



- Click the ID for a policy.
The **Edit Policy** page appears.

Policy Details :

Policy Type: **Access** Add Validity Period

Policy ID: **43**

Policy Name: Flow enabled normal

Policy Label: Policy Label

NIFI Resource Identifier: /flow

Description:

Audit Logging: **YES**

Allow Conditions : hide -

Select Role	Select Group	Select User	Permissions	Delegate Admin	
Select Roles	x nifi	x admin	Read <input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
+					

Deny All Other Accesses: **False**

Save Cancel Delete

- In the Allow Conditions section, add the user or the user group to the Select User field.
- Click Save.

Results

The user now has the NiFi and NiFi Registry rights according to the policies you added the user or user group to. These rights are inherited down the hierarchy unless there is a more specific policy on a component.

What to do next

When you have completed the steps for adding users and groups to Ranger policies, review the steps to deselect unwanted NiFi Registry dependencies and determine whether this task applies to you.

Deselect unwanted NiFi Registry dependencies

Provides steps to remove unwanted NiFi Registry dependencies.

About this task

This is an optional task. During your cluster installation, some dependencies may have been added to NiFi Registry. If you do not want these dependencies, follow these steps to remove them.

Before you begin

- You have installed a CDP Private Cloud Base cluster.
- You have added the NiFi Registry service.

Procedure

1. From Cloudera Manager, click the Clusters tab in the left-hand navigation
2. Click NiFi Registry in the list of services to display the NiFi Registry service page.
3. Select the Configuration tab.
4. Deselect any unwanted dependencies.

The screenshot shows the NiFi Registry Configuration page. On the left, there is a 'Filters' sidebar with sections for SCOPE, CATEGORY, and STATUS. The main area displays a table of dependencies:

Service	Dependency	Selected	Action
NiFi CA Service Service	NiFi Registry (Service-Wide)	<input type="checkbox"/>	none
RANGER Service	NiFi Registry (Service-Wide)	<input checked="" type="checkbox"/>	SDX
KNOX Service	NiFi Registry (Service-Wide)	<input type="checkbox"/>	none
NiFi Service	NiFi Registry (Service-Wide)	<input checked="" type="checkbox"/>	NiFi
Enable Kerberos Authentication	NiFi Registry (Service-Wide)	<input checked="" type="checkbox"/>	NiFi Registry (Service-Wide)

5. Click Save Changes. Restart the NiFi Registry service.

What to do next

You have completed your CDP Private Cloud Base Compute cluster and CFM installation.