Apache NiFi Registry User Guide

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Introduction

Apache NiFi Registry—a subproject of Apache NiFi—is a complementary application that provides a central location for storage and management of shared resources across one or more instances of NiFi and/or MiNiFi.

The first implementation of the Registry supports versioned flows. Process group level dataflows created in NiFi can be placed under version control and stored in a registry. The registry organizes where flows are stored and manages the permissions to access, create, modify or delete them.

See the System Administrator's Guide for information about Registry system requirements, installation, and configuration. Once NiFi Registry is installed, use a supported web browser to view the UI.

Browser Support

Browser	Version
Chrome	Current and Current - 1
FireFox	Current and Current - 1
Safari	Current and Current - 1

Current and Current - 1 indicates that the UI is supported in the current stable release of that browser and the preceding one. For instance, if the current stable release is 62.X then the officially supported versions will be 62.X and 61.X.

For Safari, which releases major versions much less frequently, Current and Current - 1 simply represent the two latest releases.

The supported browser versions are driven by the capabilities the UI employs and the dependencies it uses. UI features will be developed and tested against the supported browsers. Any problem using a supported browser should be reported to Apache NiFi.

Unsupported Browsers

While the UI may run successfully in unsupported browsers, it is not actively tested against them. Additionally, the UI is designed as a desktop experience and is not currently supported in mobile browsers.

Viewing the UI in Variably Sized Browsers

In most environments, all of the UI is visible in your browser. However, the UI has a responsive design that allows you to scroll through screens as needed, in smaller sized browsers or tablet environments.



Note: The minimum recommended screen size is 1080px X 445px.

Terminology

Flow: A process group level NiFi dataflow that has been placed under version control and saved to the Registry.

Bundle: A binary artifact containing one or more extensions that can be run in NiFi or MiNiFi.

Bucket: A container that stores and organizes versioned items, such as flows and bundles.

Policy: Defines a user or group's ability to perform a given action.

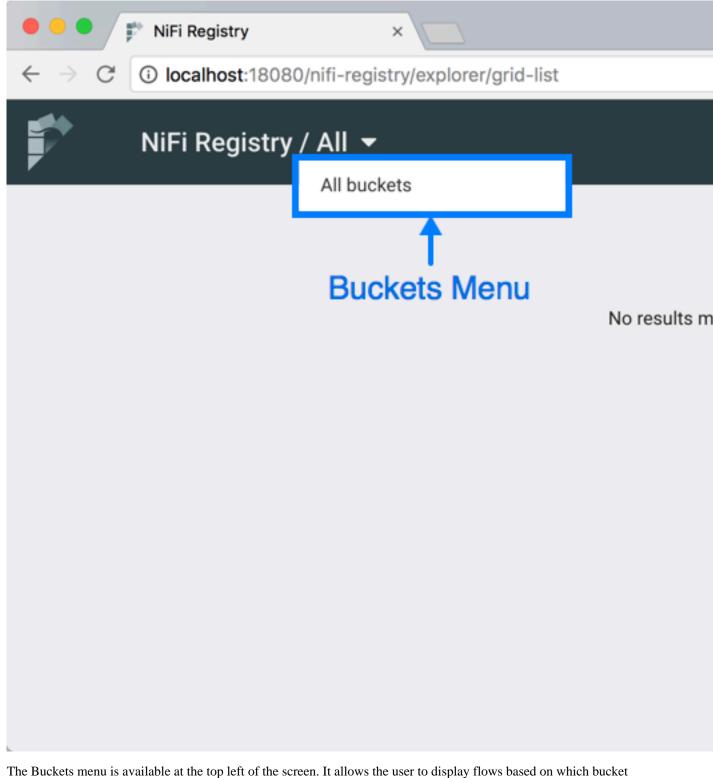
NiFi Registry User Interface

The NiFi Registry UI displays the shared resources available and provides mechanisms for creating and administering users/groups, buckets and policies.

When the application is started, the user is able to navigate to the UI by going to the default address of

http://<hostname>:18080/nifi-registry in a web browser. There are no permissions configured by default, so anyone is able to view and modify the flows and buckets. For information on securing the system, see the System Administrator's Guide.

When an administrator navigates to the UI for the first time, the registry is empty as there are no flow resources available to share yet:



they are contained in. On the top right of the screen is the Settings button () which accesses functionality for

) which accesses managing users, groups, buckets and policies. Next to the Settings button is the Help button (the NiFi Registry Documentation.

7

Logging In

If NiFi Registry is configured to run securely, users will have to be granted permissions to buckets by an administrator. For information on configuring NiFi Registry to run securely, see the System Administrator's Guide...

If the user is logging in with their username/password they will be presented with a screen to do so.

Username Password	Username	Log In	
Password			
Password			
		Password	

Manage Flows

View a Flow

Flows in all buckets are listed in the main window of the UI by default. If the registry is secured, only the flows in the buckets that the user has access to are listed.

NiFi Registry / All 👻	
Flow 1 - Bucket 1 Flow	VE 1
Flow 2 - Bucket 2 Flow	VE 2
Flow 3 - Bucket 3 Flow	VE 3

To see the flows in a particular bucket, select that bucket from the drop-down menu at the top left of the UI.

NiFi Registry / All ▼ All buckets Bucket 1 Bucket 2 Bucket 3	
Flow 1 - Bucket 1 Flow	VE 1
Flow 2 - Bucket 2 Flow	VE 2
Flow 3 - Bucket 3 Flow	VE 3

Click on a flow to see its Description and Change Log:

	NiFi Registry / All 🝷	
	Flow 1 - Bucket 1 Flow	VE 1
	Flow 2 - Bucket 2 Flow	VE 2
	DESCRIPTION	CHANGE LOG
	Description 2	Version 2 - 40 minutes ago by registry_user
		Add processors Dec-26-2017 at 11:23 PM
		Version 1 - 41 minutes ago by registry_user
L .		

The Change Log includes all versions that were saved for a flow. Clicking on the version reveals details about when the version was saved, which user committed the save, and any comments entered by the user.

Sorting & Filtering Flows

Flows can be sorted alphabetically by Name (ascending or descending) or by Update (newest or oldest) using the drop-down at the top right of the UI.

NiFi Registry / All 🔻	
Flow 1 - Bucket 1 Flow	VE 1
Flow 2 - Bucket 2 Flow	VE 2
Flow 3 - Bucket 3 Flow	VE 3

The flow list can be filtered by:

- flow name
- flow description
- flow ID
- bucket name
- bucket ID

Here is an example filtering by flow name:

NiFi Registry / All 👻	
	Flow
Flow 2 - Bucket 2 Flow	VE 2

Delete a Flow

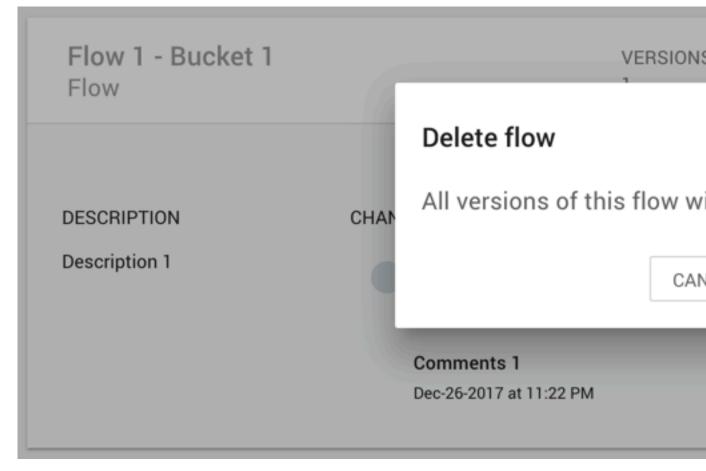
To delete a flow from the registry:

1. Click on the flow to see its details.

2. Select the "Actions" drop-down and click the "Delete" menu option.

NiFi Registry / All 🔻	,
Flow 1 - Bucket 1 Flow	V 1
DESCRIPTION Description 1	CHANGE LOG Version 1 - an hour ago by nobel
	Comments 1 Dec-26-2017 at 11:22 PM
Flow 2 - Bucket 2 Flow	V 2

3. Select "Delete" to confirm.





Note: It is possible to delete a flow that is actively being used in NiFi.

Manage Buckets

To manage buckets, enter the Administration section of the Registry by clicking the Settings button (

Sorting & Filtering Buckets

Buckets can be sorted alphabetically by Name (ascending or descending) using the up/down arrows.

NiFi Registry / Administration
BUCKETS USERS
Buckets (24)
Bucket Name
Bucket 1
Bucket 2
Bucket 3
Bucket 4
Bucket 5
Bucket 6

The buckets listed can be filtered by:

- bucket name
- bucket description
- bucket ID

Here is an example filtering by bucket name:

NiFi Registry / Administration	
BUCKETS USERS	
Buckets (24)	
	Bucket 4 🛛 😒
Bucket Name 🕶	
Bucket 4	

Create a Bucket

A bucket is needed in our registry to store and organize NiFi dataflows. To create one, select the Settings icon



)in the top right corner of the screen. In the Buckets window, select the "New Bucket" button.

NiFi Registry / Administration	
BUCKETS USERS	
Buckets (0)	
Bucket Name 🕶	
N	o resi

Enter the bucket name "Test" and select the "Create" button.

NiFi Registry	/ Administration
BUCKETS USERS	
Buckets (0)	New Bucket
Bucket Name	Bucket Name Test Bucket Name Keep this dialog open after

The "Test" bucket is created:

U.

NiFi Registry / Administration
BUCKETS USERS
Buckets (1)
Bucket Name 🔺
Test
20

There are no permissions configured by default, so anyone is able to view, create and modify buckets in this instance. For information on securing the system, see the System Administrator's Guide.

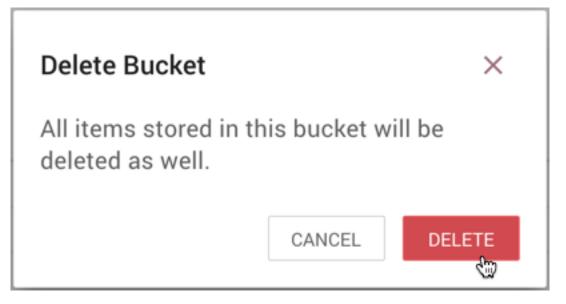
Delete a Bucket

Select the De	elete button (in the row of the bucket.
	NiFi Registry / Administration
	BUCKETS USERS
	Buckets (25)
	Bucket Name 🔺
	Bucket 0
	Bucket 1
	Bucket 2
	Bucket 3
	Bucket 4
	Bucket 5

1.

.

2. From the Delete Bucket dialog, select "Delete".



Delete Multiple Buckets

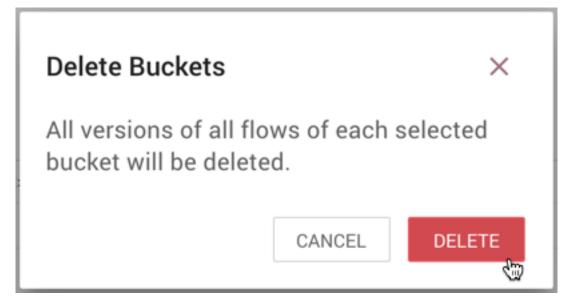
1. Select the checkboxes in the rows of the desired buckets to delete.

NiFi Registry / Administration
BUCKETS USERS
Buckets (24)
Bucket Name 🔺
Bucket 1
Bucket 2
Bucket 3
Bucket 4
Bucket 5
Bucket 6

2. Select the "Actions" drop-down and click the "Delete" option.

NiFi Registry / Administration
BUCKETS USERS
Buckets (24)
Bucket Name 🔺
Bucket 1
Bucket 2
Bucket 3
Bucket 4
Bucket 5
Bucket 6

3. From the Delete Buckets dialog, select "Delete".



Edit a Bucket Name

Select the M	Ianage button () in the row of the bucket.
	NiFi Registry / Administration
	BUCKETS USERS
	Buckets (25)
	Bucket Name 🔺
	Bucket 0
	Bucket 1
	Bucket 2
	Bucket 3
	Bucket 4
	Bucket 5

1.

2. Enter a new name for the bucket and select the "Save" button.

NiFi Registry / Administration
BUCKETS USERS
Buckets (9)
Bucket Name 🔺
Bucket 0
Bucket 1
Bucket 2
Bucket 3
Bucket 4

Make a Bucket Publicly Visible

To allow read access to items in a bucket by unauthenticated users, select the "Make publicly visible" checkbox.

	NiFi Registry / Administration
BI	UCKETS USERS
	Buckets (10)
	Bucket Name 🔺
	Bucket 0
	Bucket 1
	Bucket 2
	Bucket 3
	Bucket 4
	Dualist C

This setting will override any specific policies granting read access to the bucket.

Allow Bundles in a Bucket to be Overwritten

To allow released bundles in a bucket to be overwritten, select the "Allow bundle overwrite" checkbox.

NiFi Registry / Administration	
BUCKETS USERS	
Buckets (10)	
Bucket Name 🔺	
Bucket 0	
Bucket 1	
Bucket 2	
Bucket 3	
Bucket 4	
Duraliza E	

Currently, the only supported bundle type is a NiFi Archive (NAR). By default, buckets do not allow the re-release of released NARs. This setting explicitly allows the same version of a NAR to be uploaded to a bucket.

For more information on bundles, see the Manage Bundles section.

Bucket Policies

Bucket policies define user privileges on buckets/flows in the Registry and in NiFi. The available permissions are:

- All In the Registry, the assigned user is able to view and delete flows in the bucket. In NiFi, the selected user is able to import flows from the bucket and commit changes to flows in the bucket.
- Read In the Registry, the assigned user is able to view flows in the bucket. In NiFi, the selected user is able to import flows from the bucket.
- Write In NiFi, the assigned user is able to commit changes to flows in the bucket.
- Delete In the Registry, the assigned user is able to delete flows in the bucket.



Note: Users would typically have Read permissions at a minimum. A user with Write permission would not commit changes to a flow if they were not able to import it initially. A user with Delete permission would not delete a flow if they could not view it.



Note: If a user has a bucket policy and the group that the user is in also has a policy, all policies are used to determine access. For example, assume User1 is in Group1, User1 has READ privileges on Bucket1 and Group1 has READ privileges on Bucket2. In this scenario, User1 will have READ privileges on both Bucket1 and Bucket2.

Create a Bucket Policy

1.

Select the Manage button (\checkmark) in the row of the bucket.

2. Select the "New Policy" button.

NiFi Registry / Administration
BUCKETS USERS
Buckets (10)
Bucket Name 🔺
Bucket 3
Bucket 4
Bucket 5
Bucket 6
Bucket 7

3. Select a user, check the desired permissions and select the "Apply" button:

New Policy Display Name User2 User3 User4 User5 User6 User7 User8	×
User3 User4 User5 User6 User7	
User3 User4 User5 User6 User7	
User5 User6 User7	
User5 User6 User7	
User6 User7	
User7	
User8	
	0
User9	0
All Read Write Delete	APPLY

4. The policy is added to the bucket:

NiFi Registry / Administration
BUCKETS USERS
Buckets (10)
Bucket Name -
Bucket 3
Bucket 4
Bucket 5
Bucket 6
Bucket 7
public_bucket

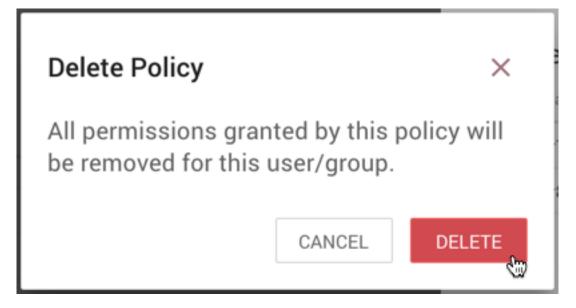
Delete a Bucket Policy

1.

Select the Manage button (

2. Select the Delete button () in the row of the policy.			
		NiFi Registry / Administration	
		BUCKETS USERS	
		Buckets (10)	
		Bucket Name 🔺	
		Bucket 2	
		Bucket 3	
		Bucket 4	
		Bucket 5	
		Bucket 6	
		Bucket 7	
		public_bucket	

3. From the Delete Policy dialog, select "Delete".



Manage Users & Groups

To manage users/groups, enter the Administration section of the Registry by clicking the Settings button () on the top right of the UI. Select Users from the top menu to open the Users window.

Sorting & Filtering Users/Groups

Users/groups can be sorted alphabetically by Name (ascending or descending) using the up/down arrows.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (55)
Display Name
User1
User2
User3
User4
User5
User6

The Users/groups listed can be filtered by:

- user name
- user ID
- group name
- group ID

Here is an example of filtering by user name:

3
3

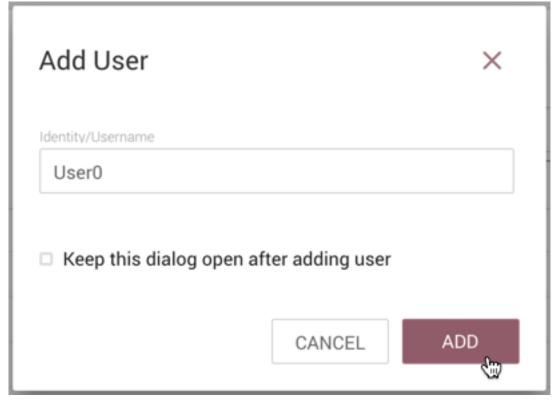
Add a User

1. Select the "Add User" button.

.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (55)
Display Name 🔺
User1
User2
User3
User4
User5
User6

2. Enter the desired username or appropriate Identity information. Select the "Add" button.



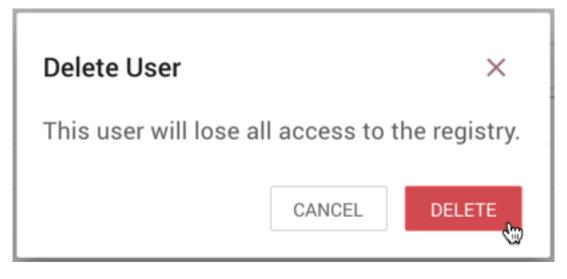


Note: To quickly create multiple users, check "Keep this dialog open after adding user".

Delete a User

1.	Select the De	elete button (in the row of the user.	
		NiFi Registry / Administration	
		BUCKETS USERS	
		Authorized Users (56)	
		Display Name 🔺	
		User0	
		User1	
		User2	
		User3	
		User4	
		User5	

2. From the Delete User dialog, select "Delete".



Delete Multiple Users

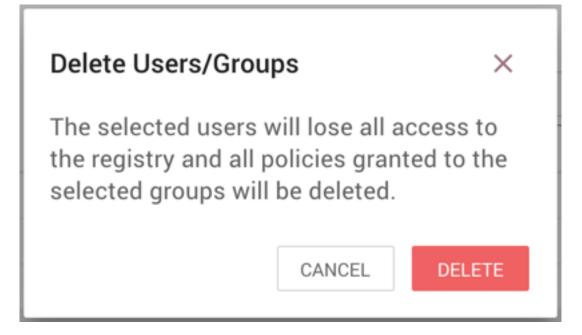
1. Select the checkboxes in the rows of the desired users to delete.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (55)
Display Name 🔺
User1
User2
User3
User4
User5
User6

2. Select the "Actions" drop-down and click the "Delete" option.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (55)
Display Name 🔺
User1
User2
User3
User4
User5
User6

3. From the Delete Users dialog, select "Delete".



Edit a User Name

Select the Mar	hage button () in the row of the user.
	NiFi Registry / Administration
	BUCKETS USERS
	Authorized Users (56)
	Display Name 🔺
	User 0
	User1
	User2
	User3
	User4
	User5

1.

2. Enter a new user name and select the "Save" button.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (13)
Display Name 🔺
User0
User1
User2
User3
User4
User5

Display Name A test training	Authorized Users (56)	
test		
training		
	training	

Special Privileges

Special privileges are additional permissions that allow a user to manage or access certain aspects of the Registry. The special privileges are:

- Can manage buckets Allow a user to manage all buckets in the registry, as well as provide the user access to all buckets from a connected system (e.g., NiFi).
- Can manage users Allow a user to manage all registry users and groups.
- Can manage policies Allow a user to grant all registry users read, write, and delete permission to a bucket.
- Can proxy user requests Allow a connected system (e.g., NiFi) to process requests of authorized users of that system. For example, if dev and prod NiFi clusters are connected to the same NiFi Registry instance, privileges can be set to allow the dev NiFi cluster to only update versioned flows while limiting the prod NiFi to only download flows.

Grant Special Privileges to a User

Select the Manag	e button () in the row of the user.
	NiFi Registry / Administration
E	BUCKETS USERS
	Authorized Users (56)
	Display Name 🔺
	User 0
	User1
	User2
	User3
	User4
	User5

1.

2. Check the desired privileges:

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (13)
Display Name 🔺
User0
User1
User2
User3
User4
User5
User6
User7
User8
51

3. Changes made to special privileges are automatically saved.

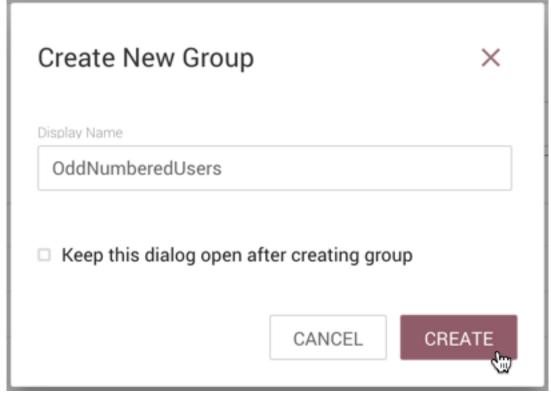
Manage Groups

Add an Empty Group

1. With no users checked, select the "Actions" drop-down and click the "Create new group" option.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (56)
Display Name 🔺
User1
User2
User3
User4
User5
Userб

2. Enter a name for the Group and select the "Create" button.



Note: To quickly create multiple empty groups, check "Keep this dialog open after creating group".

Add User to a Group

1.

0

Select the Manage button () in the row of the user.

2. Select the "Add To Group" button.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (14)
Display Name 🔺
User0
User1
User2
User3
User4
User5
User6
User7
User8

3. In the "Add User to Groups" dialog, select the group(s) to add the user to. Select the "Add" button when all desired groups have been selected.

Add user to groups	×
Display Name 🔺	
🚰 Group1	
🖀 Group2	
🚰 Group3	•
🖀 Group4	
🚰 Group5	
🖀 Group6	0
🖀 Group7	
CANCEL	ADD
OANOLL	A

4. The user is added to the group:

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (14)
Display Name 🔺
User0
User1
User2
User3
User4
User5
User6
User7
User8



Note: Groups cannot contain other groups.

Create a New Group with Selected Users

1. Select the checkboxes in the rows of the desired users. From the "Actions" drop-down, click the "Create new group" option.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (65)
Display Name 🔺
User1
User2
User3
User4
User5
User6
User7
User8
User9

2. Enter a name for the Group and select the "Create" button.

Create New Group	×
Display Name	
EvenNumberedUsers	
 Keep this dialog open after creating group CANCEL 	ATE

3. The new group is created with the selected users as members:

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (15)
Display Name 🔺
EvenNumberedUsers
😁 Group7
CN=localhost, OU=NIFI
CN=sys_admin, OU=NIFI
CN=test_user, OU=NIFI
User0
User1
User2
User3
User4
User5

Remove a User from a Group

There are two ways to remove a user from a group.

User Window

1.

Select the Manage button () in the row of the user.

2. In the Membership section of the window, select the Remove button () in the row of the group.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (15)
Display Name 🔺
User0
User1
User2
User3
User4
User5
User6
User7
User8
User9

Group Window

1.

Select the Manage button () in the row of the group. The Members tab is selected by default.

2.		ŵ	
	In the Membership section of the window, select the Remove button () in the row of the user.

NiFi Registry / Administration
BUCKETS USERS
Authorized Users (15)
Display Name 🔺
😁 EvenNumberedUsers
🚰 Group7
CN=localhost, OU=NIFI
CN=sys_admin, OU=NIFI
CN=test_user, OU=NIFI
User0
User1
User2
User3
User4
User5

Other Group Level Actions

Editing group names, deleting groups, adding policies to/deleting policies from groups and granting special privileges to groups follow similar procedures described earlier for corresponding user level actions.

Manage Bundles

Bundles can be managed through the REST API.

Upload Bundle

A bundle can be uploaded to a bucket by making a POST request to the following REST end-point:

/nifi-registry-api/buckets/<bucketId>/bundles/<bundleType>

Replace bucketId with the id of the bucket where the bundle is being uploaded to and bundleType with the type of bundle being uploaded. Currently, the only supported bundle type is a https://nifi.apache.org/docs/nifi-docs/html/ developer-guide.html#nars which can be specified as nifi-nar.

The Content-Type of the request is expected to be multipart/form-data. An example of using curl to upload my-proce ssors-1.0.0.nar would be the following:

```
curl -v -F file=@/path/to/my-processors-1.0.0.nar http://localhost:18080/nif
i-registry-api/buckets/de8e08c9-592d-4e10-affe-b3752698f1d9/bundles/nifi-nar
```



Note: In order to upload a NAR to NiFi Registry, it must contain the file META-INF/docs/extensionmanifest.xml which is produced by the NAR Maven plugin, starting with version 1.3.0.

Download Bundle

There are two ways to download a bundle.

Bundle Coordinates

A bundle can be downloaded by using the combination of the bucket name and bundle coordinates, where bundle coordinates are the group, artifact, and version of the bundle.

To download a bundle by its coordinates, a GET request can be made to the following end-point:

```
/nifi-registry-api/extension-repository/{bucketName}/{groupId}/{artifactId}/
{version}/content
```

The Content-Type of the response is application/octet-stream.

An example of using curl to download my-processors-1.0.0.nar from the Test bucket would be the following:

```
curl http://localhost:18080/nifi-registry-api/extension-repository/Test/com.
test/my-processors/1.0.0/content > my-processors-1.0.0.nar
```

Bundle Id

A bundle can be downloaded by using the combination of its unique id and version. The unique id is an id assigned to the bundle when the first version of the bundle is uploaded to NiFi Registry. This id is returned in the response of a successful upload.

To download a bundle by its id and version, a GET request can be made to the following end-point:

/nifi-registry-api/bundles/{bundleId}/versions/{version}/content

The Content-Type of the response is application/octet-stream.

An example of using curl to download my-processors-1.0.0.nar by id and version would be the following:

```
curl http://localhost:18080/nifi-registry-api/bundles/3db78035-e3ba-4cbf-820
e-022f292bd68c/versions/1.0.0/content > my-processors-1.0.0.nar
```

Additional Actions

For additional actions that can be performed related to bundles, please consult the REST API documentation.