

Getting Started with Apache NiFi Registry

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Who is This Guide For?

This guide is written for users who have basic experience with NiFi but have little familiarity with the NiFi Registry. This guide is not intended to be an exhaustive instruction manual or a reference guide. The [NiFi Registry User Guide](#) and [NiFi User Guide](#) provide a great deal more information about using the Registry and integrating it with NiFi. This guide, in comparison, is intended to provide users with just the information needed in order to understand how to configure NiFi Registry, connect with NiFi and start using versioned NiFi dataflows.

Terminology Used in This Guide

In order to talk about NiFi Registry, there are a few key terms that readers should be familiar with:

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

Bucket: A container that stores and organizes flows.

Downloading and Installing NiFi Registry

You can download NiFi and NiFi Registry from the CFM repository. Review *Download from the CFM Repository* to identify the download link suitable for your operating system and operational objectives.

Starting NiFi Registry

Once NiFi Registry has been downloaded and installed as described above, it can be started by using the mechanism appropriate for your operating system.

For Linux/Unix/Mac OS X users

Use a Terminal window to navigate to the directory where NiFi Registry was installed. To run NiFi Registry in the foreground, run `bin/nifi-registry.sh run`. This will leave the application running until the user presses Ctrl-C. At that time, it will initiate shutdown of the application.

To run NiFi Registry in the background, instead run `bin/nifi-registry.sh start`. This will initiate the application to begin running. To check the status and see if NiFi Registry is currently running, execute the command `bin/nifi-registry.sh status`. NiFi Registry can be shutdown by executing the command `bin/nifi-registry.sh stop`.

Installing as a Service

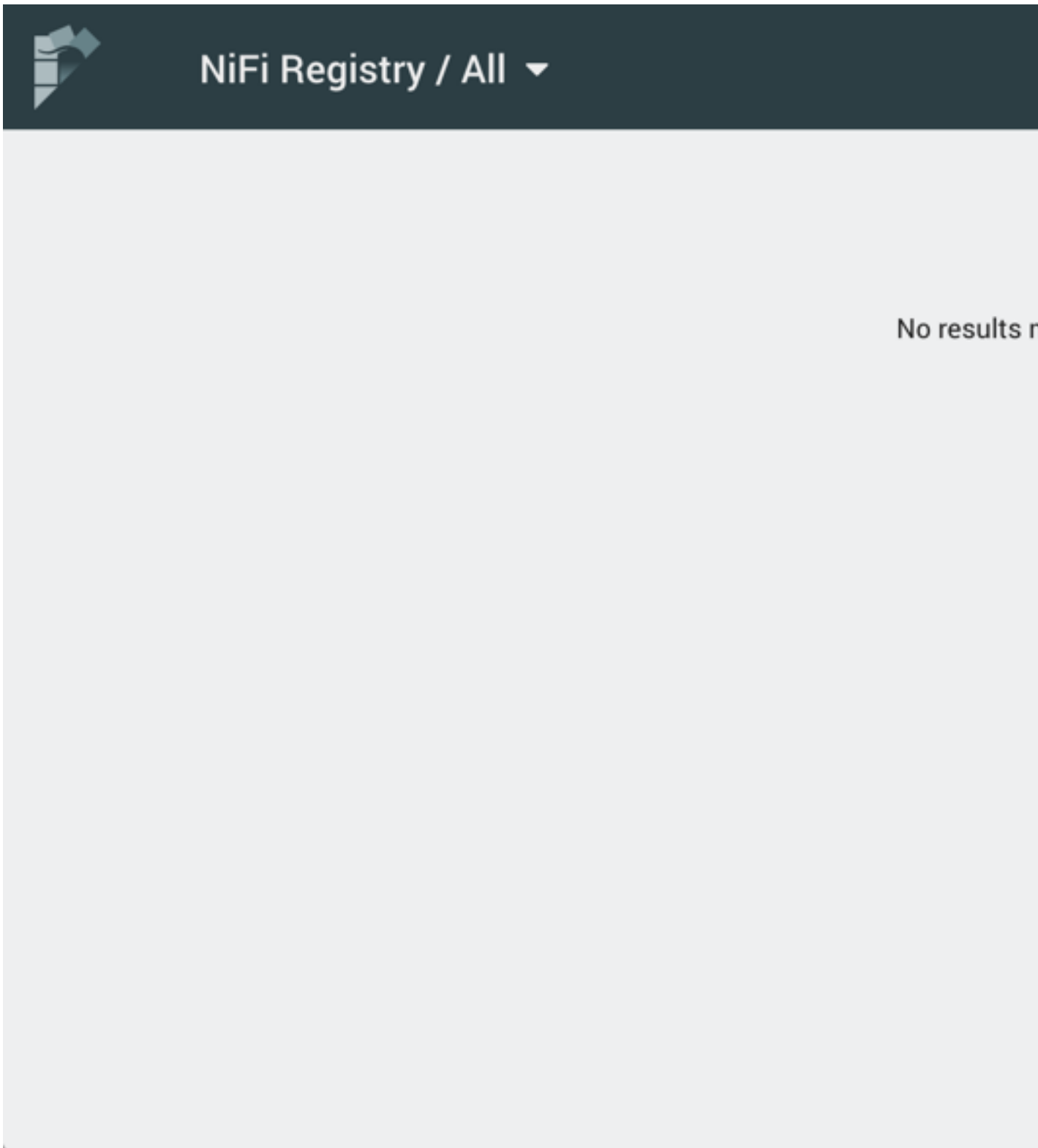
To install the application as a service, navigate to the installation directory in a Terminal window and execute the command `bin/nifi-registry.sh install` to install the service with the default name `nifi-registry`. To specify a custom name for the service, execute the command with an optional second argument that is the name of the service. For example, to install NiFi Registry as a service with the name `flow-registry`, use the command `bin/nifi-registry.sh install flow-registry`.

Once installed, the service can be started and stopped using the appropriate commands, such as `sudo service nifi-registry start` and `sudo service nifi-registry stop`. Additionally, the running status can be checked via `sudo service nifi-registry status`.

I Started NiFi Registry. Now What?

Now that NiFi Registry has been started, we can bring up the User Interface (UI). To get started, open a web browser and navigate to `http://localhost:18080/nifi-registry`. The port can be changed by editing the `nifi-registry.properties` file in the NiFi Registry conf directory, but the default port is 18080.

This will bring up the Registry UI, which at this point is empty as there are no flow resources available to share yet:



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

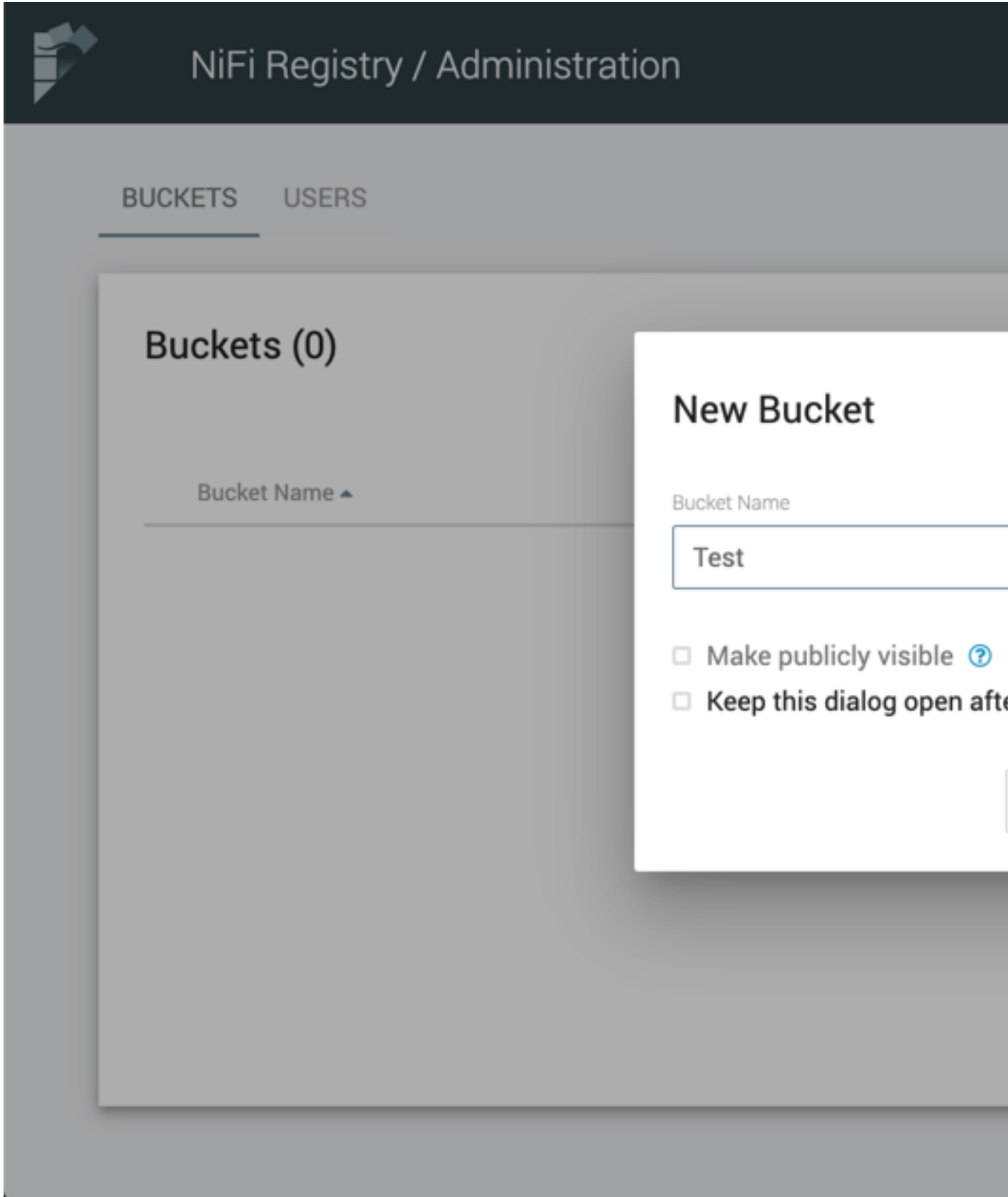
USERS

Buckets (0)

Bucket Name ▼

No results

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



The screenshot shows the NiFi Registry Administration interface. At the top, there is a dark header with the NiFi logo and the text "NiFi Registry / Administration". Below the header, there are two tabs: "BUCKETS" and "USERS". The "BUCKETS" tab is selected and underlined. The main content area shows "Buckets (0)" and a "Bucket Name" input field. A "New Bucket" dialog box is open on the right side of the screen. The dialog box has a title "New Bucket" and a "Bucket Name" input field containing the text "Test". Below the input field, there are two checkboxes: "Make publicly visible" (with a help icon) and "Keep this dialog open after".

The "Test" bucket is created:



NiFi Registry / Administration

BUCKETS

USERS

Buckets (1)

Bucket Name ▲

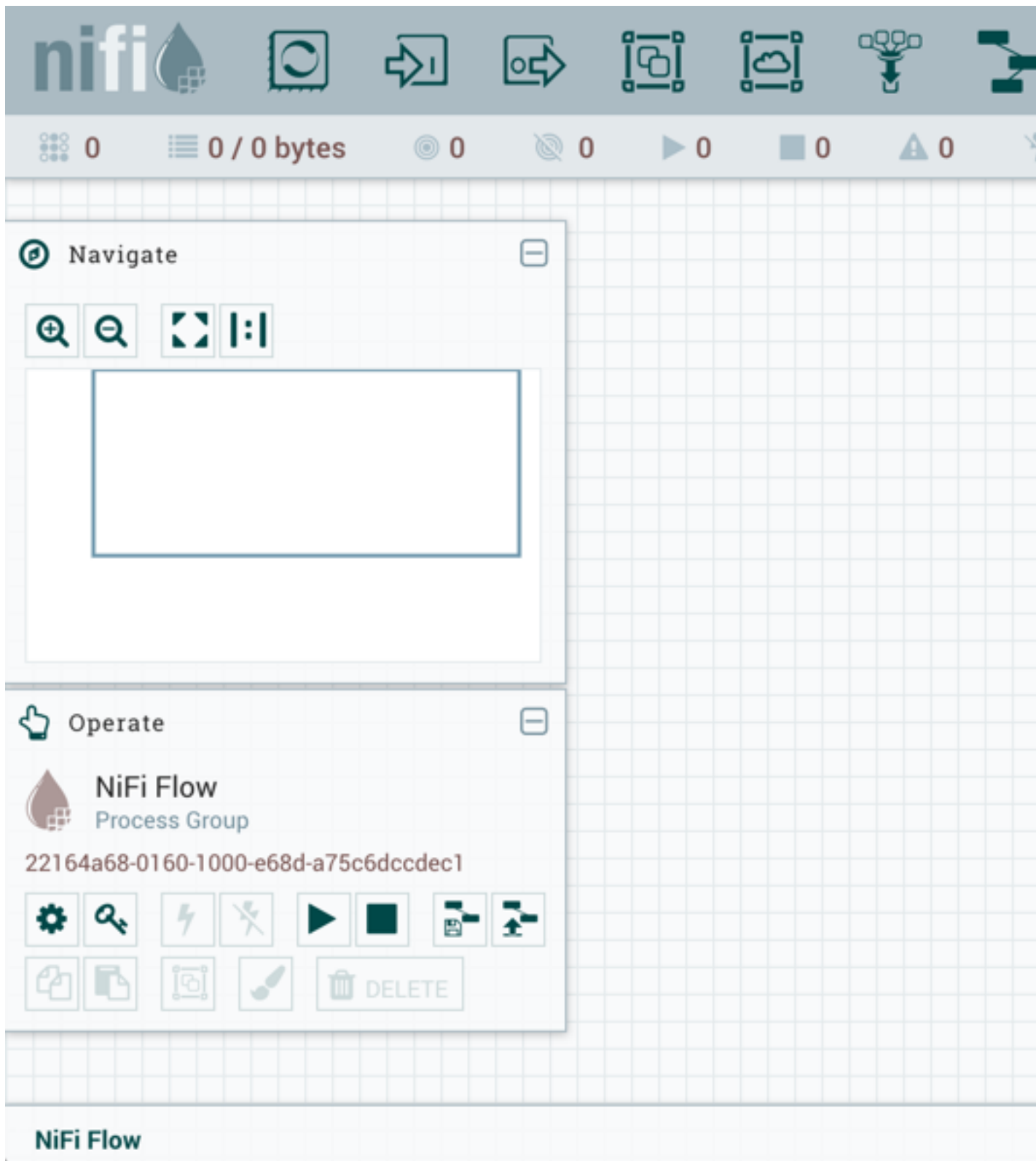
Test

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](#).

Connect NiFi to the Registry

Now it is time to tell NiFi about the local registry instance.

Start a NiFi instance if one isn't already running and bring up the UI. Go to controller settings from the top-right menu:



Select the Registry Clients tab and add a new Registry Client giving it a name and the URL of `http://localhost:18080::`

NiFi Settings

GENERALREPORTING TASK CONTROLLER SERVICESREPORTING TASKSREGISTRY

Name ▲	Location
Local Registry	http://localhost:18080

 Last updated: 13:30:48 EST

NiFi Flow

Start Version Control on a Process Group

With NiFi connected to a NiFi Registry, dataflows can be version controlled on the process group level.

Right-click on a process group and select "Version#Start version control" from the context menu:

The screenshot displays the Apache NiFi web interface. At the top is a toolbar with various icons for navigation and actions. Below the toolbar is a status bar showing metrics: 0 nodes, 0 / 0 bytes of data, 0 processors, 0 queues, 0 flows, 2 errors, 0 warnings, and 0 failures.

Two panels are open on the left:

- Navigate:** Contains zoom in (+), zoom out (-), and full-screen icons. The main area shows a dark blue rectangle representing the flow canvas.
- Operate:** Shows details for a process group named "ABCD". It includes the NiFi icon, the name "ABCD", the type "Process Group", and a long alphanumeric ID: "007ed2e3-0161-1000-8ac5-49855b2dd8e5". Below this are icons for settings, refresh, delete, play, stop, and other actions. At the bottom of the panel is a "DELETE" button.

On the right, a detailed status popup for the "ABCD" process group is visible. It shows the same metrics as the top bar but for this specific group: 0 nodes, 0 / 0 bytes, 0 processors, 0 queues, 0 flows, 2 errors, 0 warnings, and 0 failures. Below these metrics is a table of flow statistics:

Flow Name	Flow Type	Value
Queued		0 (0 bytes)
In		0 (0 bytes) →
Read/Write		0 bytes / 0 bytes
Out		0 → 0 (0 bytes)

At the bottom of the popup are additional status icons: 0 checks, 0 errors, 0 warnings, 0 failures, and a question mark.

The bottom of the interface shows the text "NiFi Flow".

The local registry instance and "Test" bucket are chosen by default to store your flow since they are the only registry connected and bucket available. Enter a flow name, flow description, comments and select "Save":

The screenshot shows the NiFi Registry interface with a 'Save Flow Version' modal dialog open. The background interface includes a top toolbar with various icons, a left sidebar with 'Navigate' and 'Operate' sections, and a main canvas area. The 'Save Flow Version' dialog has a title bar and several input fields: 'Registry' (Local Registry), 'Bucket' (Test), 'Flow Name' (ABCD), 'Flow Description' (Generate flowfiles and store attributes), and 'Version Comments' (Initial save). The 'Flow Name' field is highlighted with a red border. The 'Flow Description' field contains the text 'Generate flowfiles and store attributes' with 'flowfiles' underlined in red. The 'Version Comments' field contains the text 'Initial save'.

Save Flow Version

Registry
Local Registry

Bucket
Test

Flow Name
ABCD

Flow Description
Generate flowfiles and store attributes

Version Comments
Initial save

NiFi Flow



As indicated by the Version State icon () in the top left corner of the component, the process group is now saved as a versioned flow in the registry.

The screenshot displays the Apache NiFi web interface. At the top is a toolbar with various icons for navigation and actions. Below the toolbar is a status bar showing metrics: 0, 0 / 0 bytes, 0, 0, 0, 2, 0, and 0. The main workspace is a grid. On the left, there are two side panels. The 'Navigate' panel has search and zoom controls and a large empty box. The 'Operate' panel shows the 'NiFi Flow' process group with its ID '0073d526-0161-1000-31b8-6204b9af2a17' and a set of action icons. On the right, a tooltip for a flow icon shows a green checkmark, the name 'ABCD', and a target icon. A dark overlay on the tooltip contains the text 'Tracking to "ABCD"'. Below this, a table shows flow statistics.

Queue	Flow version is current
In	0 (0 bytes)
Read/Write	0 bytes / 0
Out	0 → 0 (0 bytes)

At the bottom left, the text 'NiFi Flow' is visible.

Go back to the Registry UI and return to the main page to see the versioned flow you just saved (a refresh may be required):



NiFi Registry / All ▼

ABCD - Test Flow

DESCRIPTION

Generate flowfiles and store attributes

CHANGE LOG



Version 1 - 5 minutes ago
by anonymous

Initial save

Jan-16-2018 at 2:48 PM

Save Changes to a Versioned Flow

Changes made to the versioned process group can be reviewed, reverted or saved.

For example, if changes are made to the ABCD flow, the Version State changes to "Locally modified" (). The right-click menu will now show the options "Commit local changes", "Show local changes" or "Revert local changes":

The screenshot displays the Apache NiFi web interface. At the top, there is a header bar with the 'nifi' logo and a series of icons representing different components. Below the header, a status bar shows various metrics: 0, 0 / 0 bytes, 0, 0, 0, 2, 0, and 0. The main workspace is a grid where a process group named 'ABCD' is visible. The 'Operate' panel is open, showing the process group's details and a set of control buttons. A context menu is open over the 'ABCD' process group, listing actions such as 'Refresh', 'Leave group', 'Configure Variables', 'Version', 'Start', 'Stop', 'Upload template', and 'Create template'. The 'NiFi Flow' tab is selected at the bottom, and the 'ABCD' process group is highlighted with a blue box.

Navigate

Operate

ABCD
Process Group
007ed2e3-0161-1000-8ac5-49855b2dd8e5

Generate
GenerateF
org.apache.n

In 0 (0 byte)
Read/Write 0 bytes /
Out 0 (0 byte)
Tasks/Time 0 / 00:00

Refresh
Leave group
Configure Variables
Version
Start
Stop
Upload template
Create template

NiFi Flow » * **ABCD**

Select "Show local changes" to see the details of the changes made:

The screenshot shows the Apache NiFi web console interface. At the top, there's a navigation bar with the 'nifi' logo and several icons. Below this, a status bar shows '0' and '0 / 0 bytes'. The main area is divided into a left sidebar and a right pane. The sidebar has a 'Navigate' section with search and zoom icons, and an 'Operate' section with a thumbs-up icon. The right pane displays the 'Show Local Changes' modal for a process group named 'ABCD'. The modal shows a list of changes made to the process group, including 'GenerateFlowFile' (Run Schedule Changed), 'LogAttribute' (Position Changed), and 'Backpressure Data Size Th'.

Show Local Changes

The following changes have been made to ABCD (Ver

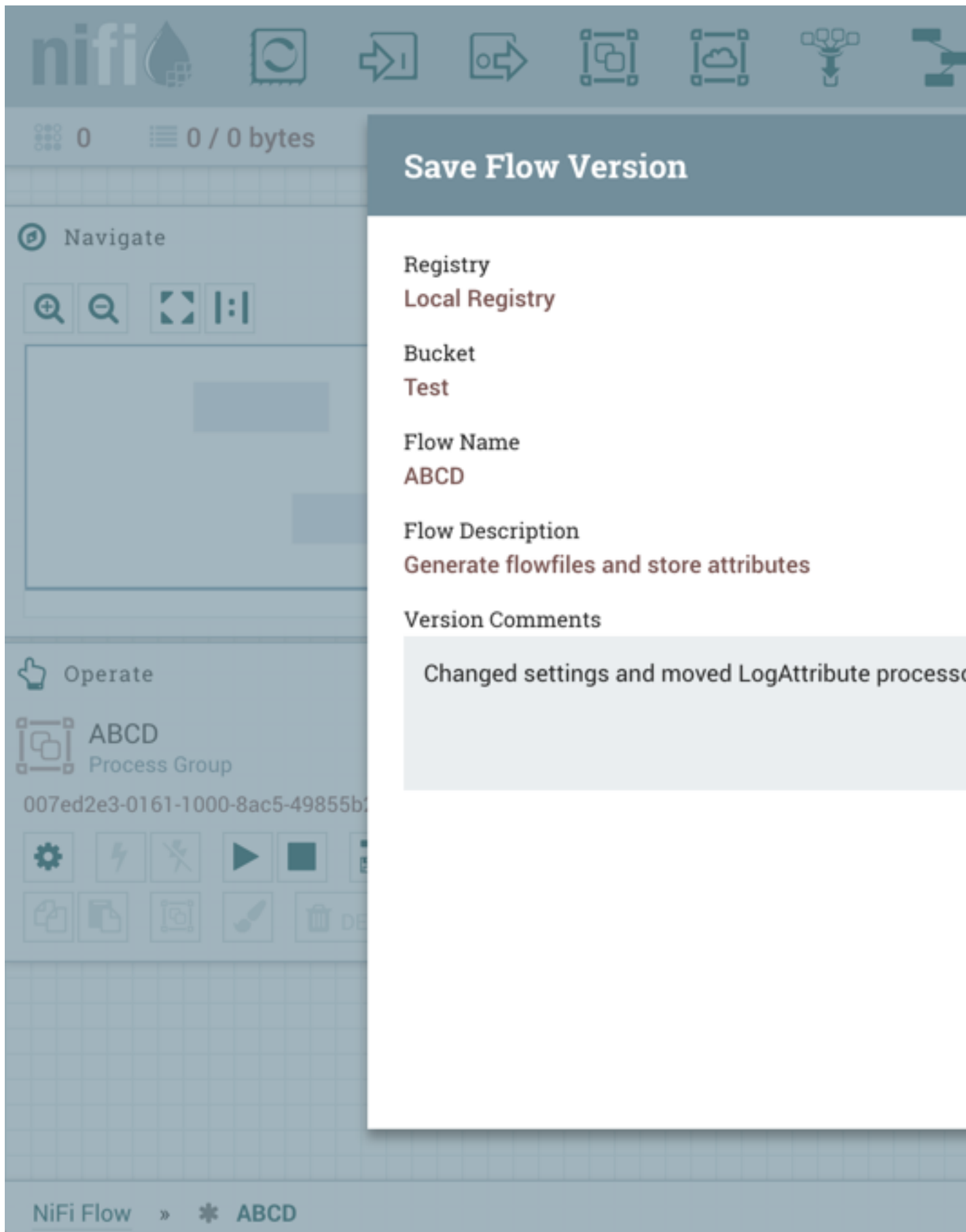
Displaying 3 of 3

Filter

Component Name ▲	Change Type
GenerateFlowFile	Run Schedule Changed
LogAttribute	Position Changed
	Backpressure Data Size Th

NiFi Flow » * ABCD

Select "Commit local changes", enter comments and select "Save" to save the changes:



Version 2 of the flow is saved:

The screenshot displays the Apache NiFi web console interface. At the top, there is a header bar with the 'nifi' logo and a series of icons representing different components: a square with a circle, a square with an arrow, a square with a circle and arrow, a square with a cloud, a square with a tree, and a square with a double arrow. Below the header, a status bar shows various metrics: a grid icon with '0', a list icon with '0 / 0 bytes', a target icon with '0', a magnifying glass icon with '0', a play icon with '0', a red square icon with '2', a warning triangle icon with '0', and a crossed-out square icon with '0'.

The main workspace is divided into two panels:

- Navigate Panel:** Contains a search bar with a magnifying glass icon, a zoom in/out icon, a full screen icon, and a refresh icon. Below these is a large empty rectangular area.
- Operate Panel:** Contains a hand icon, the text 'NiFi Flow Process Group', and a unique identifier '0073d526-0161-1000-31b8-6204b9af2a17'. Below this are two rows of icons: the first row includes a gear, a lightning bolt, a crossed-out square, a play button, a square, and two arrows; the second row includes two document icons, a square with a circle, a paintbrush, and a 'DELETE' button.

On the right side, a tooltip is visible for a flow named 'ABCD'. It shows a green checkmark, a target icon with '0', and the text 'Tracking to "ABCD"'. Below this, it lists the flow's status: 'Queue Flow version is current', 'In 0 (0 bytes)', 'Read/Write 0 bytes / 0', and 'Out 0 → 0 (0 bytes)'. At the bottom of the tooltip are several status icons: a checkmark with '0', a star with '0', an up arrow with '0', and a warning triangle with '0'.

The bottom left corner of the interface shows the text 'NiFi Flow'.

Import a Versioned Flow

With a flow existing in the registry, we can use it to illustrate how to import a versioned process group.

In NiFi, select Process Group from the Components toolbar and drag it onto the canvas:

The screenshot displays the Apache NiFi Flow interface. At the top, a toolbar contains various icons for creating and managing flows. A tooltip labeled "Process Group" is visible over the icon representing a process group (a square with a plus sign and a gear). Below the toolbar, a status bar shows metrics: 0 nodes, 0 / 0 bytes, 0 connections, and 2 process groups. On the left, two panels are open: "Navigate" and "Operate". The "Operate" panel shows details for the "NiFi Flow" process group, including its ID (0073d526-0161-1000-31b8-6204b9af2a17) and a set of control icons. On the right, a summary card for the "ABCD" process group is displayed, showing its status and performance metrics.

Navigate

Operate

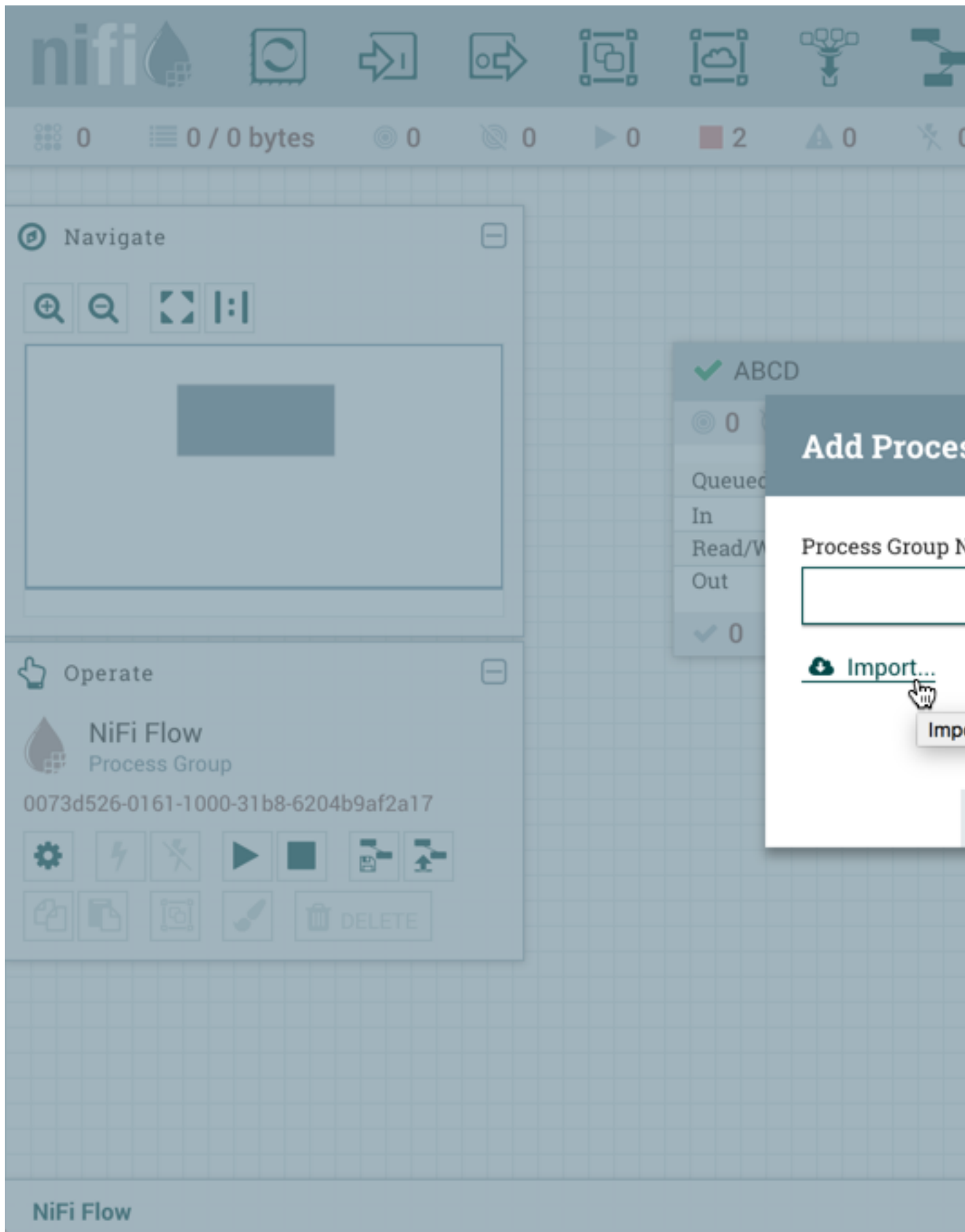
NiFi Flow
Process Group
0073d526-0161-1000-31b8-6204b9af2a17

ABCD

Queued	0 (0 bytes)
In	0 (0 bytes)
Read/Write	0 bytes / 0
Out	0 → 0 (0 by

NiFi Flow

Instead of entering a name, click the Import link:



Choose the version of the flow you want imported and select "Import":

Import Version

Registry
Local Registry

Bucket
Test

Name
ABCD

Version ▾	Created	Comments
2	01/16/2018 16:20:19.309	Changed
1	01/16/2018 14:48:21.899	Initial save

NiFi Flow

A second identical PG is now added:










 0
  0 / 0 bytes
  0
  0
  0
  2
  0
  0


 Navigate
 









 Operate
 


NiFi Flow
 Process Group
 0073d526-0161-1000-31b8-6204b9af2a17














 DELETE


 ABCD

 0
  0
  0
  2

Queued	0 (0 bytes)
In	0 (0 bytes)
Read/Write	0 bytes / 0
Out	0 → 0 (0 by

 0
  0
  0
  0

NiFi Flow

Where To Go For More Information

In addition to this Getting Started Guide, more information about NiFi Registry and related features in NiFi can be found in the following guides:

- [Apache NiFi Registry User Guide](#) - This guide provides information on how to navigate the Registry UI and explains in detail how to manage flows/policies/special privileges and configure users/groups when the Registry is secured.
- [Apache NiFi Registry System Administrator's Guide](#) - A guide for setting up and administering Apache NiFi Registry. Topics covered include: system requirements, security configuration, user authentication, authorization, proxy configuration and details about the different system-level settings.
- [Apache NiFi User Guide](#) - A fairly extensive guide that is often used more as a Reference Guide, as it provides information on each of the different components available in NiFi and explains how to use the different features provided by the application. It includes the section [Versioning a Dataflow](#) which covers the integration of NiFi with NiFi Registry. Topics covered include: connecting to a registry, version states, importing a versioned flow and managing local changes.
- [Contributor's Guide](#) - A guide for explaining how to contribute work back to the Apache NiFi community so that others can make use of it.

In addition to the guides provided here, you can browse the different [NiFi Mailing Lists](#) or send an e-mail to one of the mailing lists at users@nifi.apache.org or dev@nifi.apache.org.

Many of the members of the NiFi community are also available on Twitter and actively monitor for tweets that mention [@apachenifi](#).