



Red Hat CodeReady Studio 12.21.3

Getting Started with Container and Cloud-based Development

Starting Development of Container and Cloud-based Applications Using Red Hat CodeReady Studio

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Starting Development of Container and Cloud-based Applications Using Red Hat CodeReady Studio

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Abstract

This compilation of topics contains information on how to start developing containerized applications and applications for cloud deployment.

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MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see [our CTO Chris Wright's message](#).

CHAPTER 1. DEVELOPING USING CONTAINERS AND THE CLOUD IN CODEREADY STUDIO

1.1. USING RED HAT CODEREADY CONTAINERS TOOLS IN CODEREADY STUDIO

Red Hat CodeReady Containers (CRC) brings a minimal OpenShift 4 cluster to your local computer. This cluster provides a minimal environment for development and testing purposes. It is mainly targeted at running on developers' desktops. For other use cases, such as headless, multi-developer or team-based setups, use of the [full-fledged OpenShift installer](#) is recommended.

For a more in-depth introduction to OpenShift, see [OpenShift documentation](#).

1.1.1. Downloading and installing Red Hat CodeReady Containers

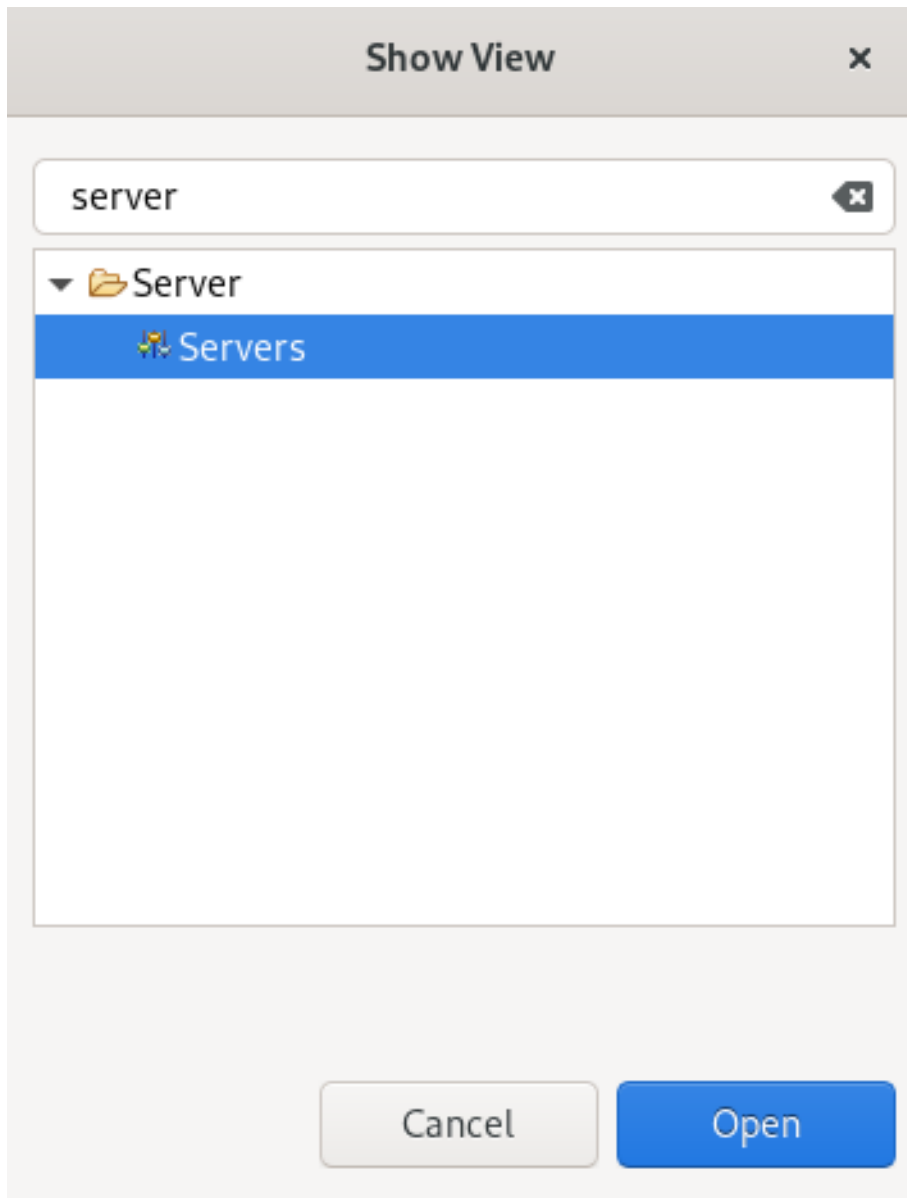
The following section describes how to set up CodeReady Containers in CodeReady Studio.

Prerequisites

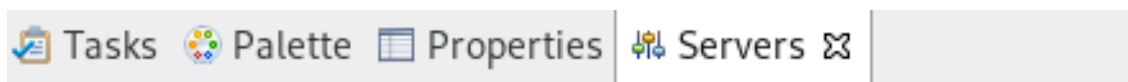
1. [Download the latest release of CodeReady Containers and the pull secret](#) .
2. Extract the CRC file.
For more information on how to install and set up CRC, see the Installation chapter of the [Getting started with CodeReady Containers Guide](#).

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.

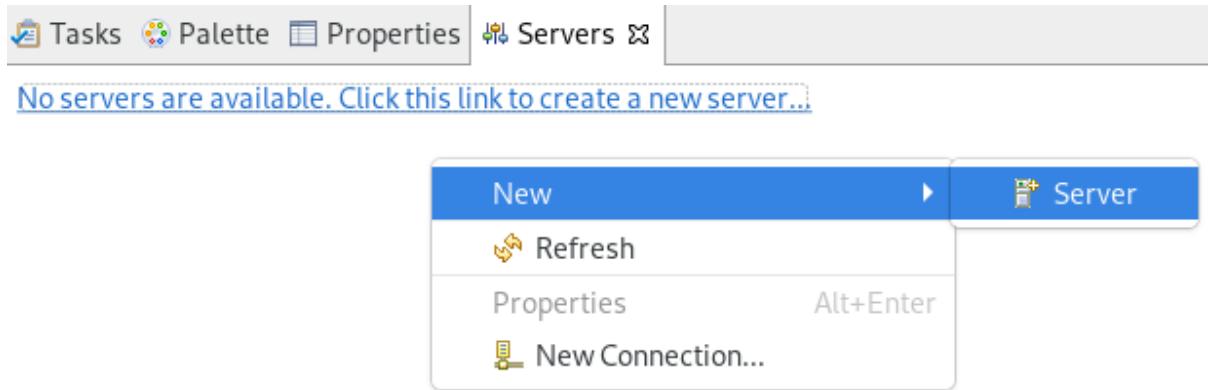


3. Enter **Server** in the search field.
4. Select **Servers**.
5. Click **Open**.
The **Servers** view appears.



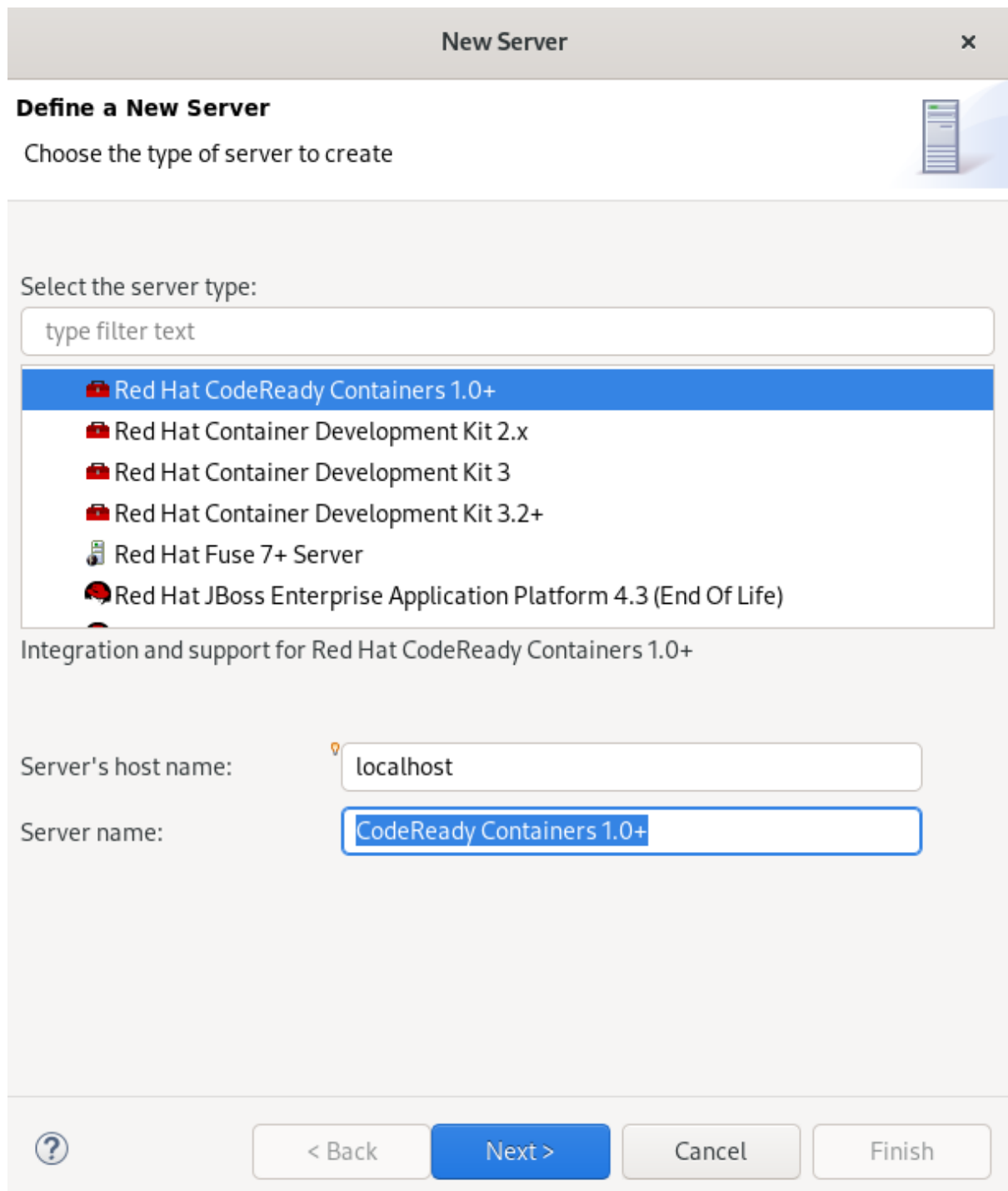
[No servers are available. Click this link to create a new server...](#)

6. Right-click any area in the **Servers** view.



7. Click **New** → **Server**.

The **Define a New Server** window appears.



8. Select **CodeReady Containers 1.0+**.
9. Click **Next**.
The **CodeReady Containers** window appears.

New Server [Close]

Red Hat CodeReady Containers
A server adapter representing a Red Hat CodeReady Container.

[Download and install runtime...](#)

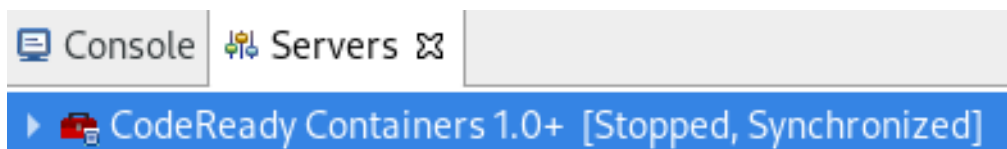
CRC Binary:

CRC Pull Secret File:

[?]

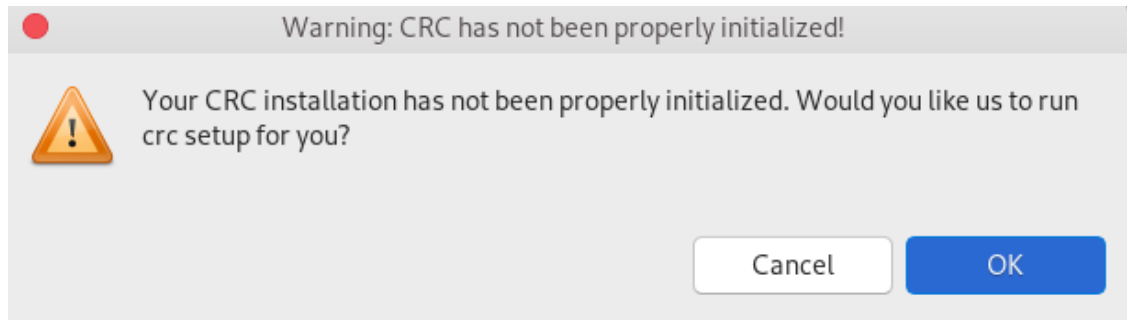
10. Click **Browse** to locate the **CRC binary**.
11. Click **Browse** to locate the **CRC Pull Secret File**.
12. Click **Finish**.

Your newly added CodeReady Containers 1.0+ server adapter is now listed in the **Servers** view.



NOTE

In case you did not set up CRC prior to starting the server adapter, you will see a warning: **CRC has not been properly initialized!**



Follow the on-screen instructions to initialize CRC.

The instructions prompt you for optional, anonymous usage data collection to assist with development. No personally identifiable information is collected. For information on changing your settings later, visit [Red Hat CodeReady Containers - Consent for telemetry data collection](#).

1.1.2. Using OpenShift Container Platform tools

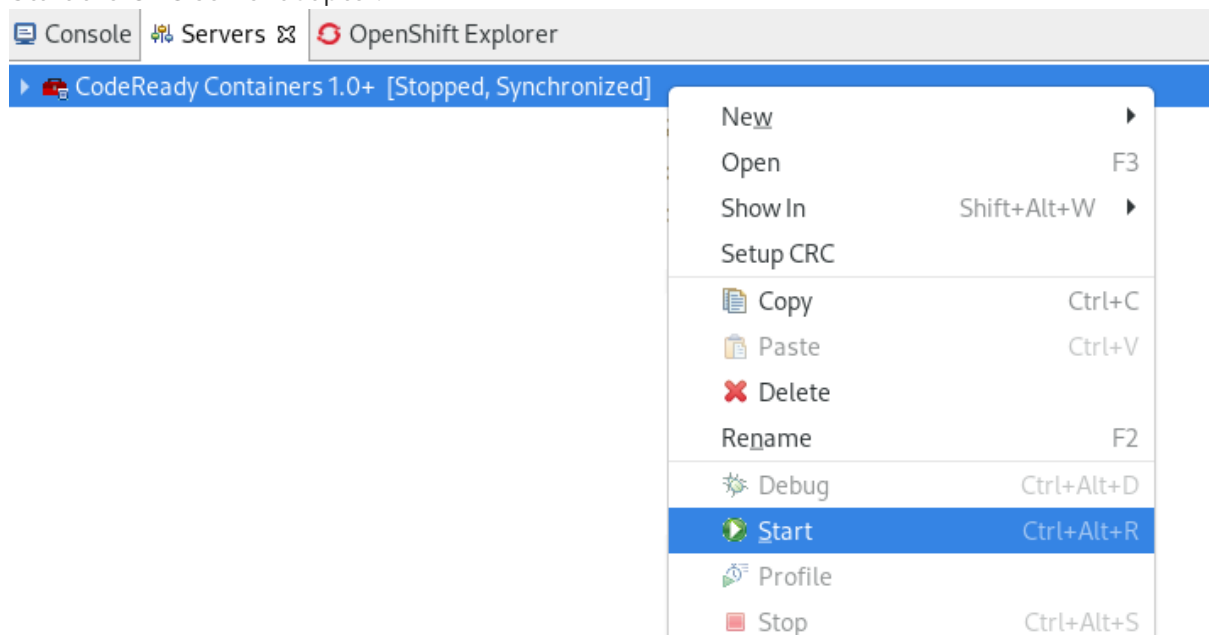
The following section describes how to use OpenShift Containers in CodeReady Studio.

Prerequisites

- The CRC server adapter is set up and configured. For more information, see [Downloading and installing CRC](#).

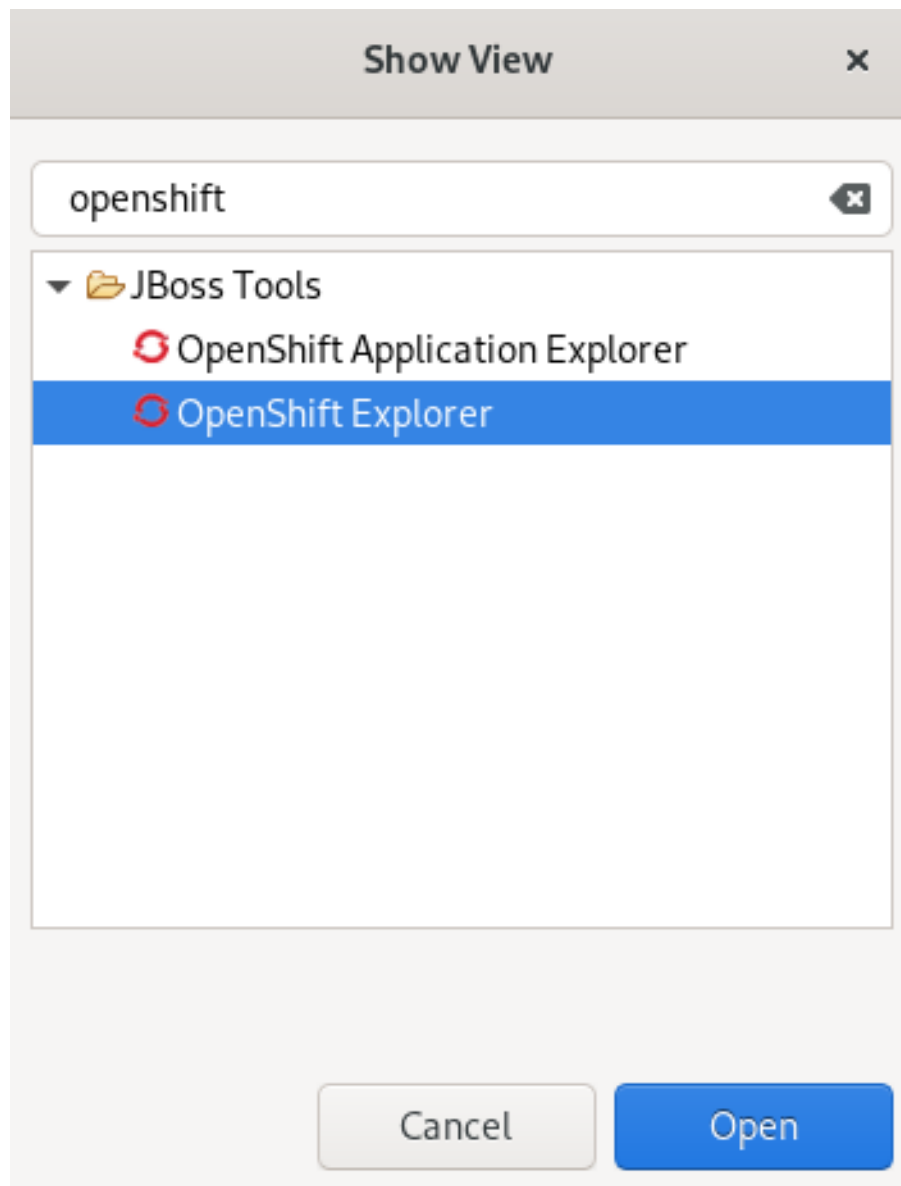
Procedure

1. Start CodeReady Studio.
2. Start the CRC server adapter.



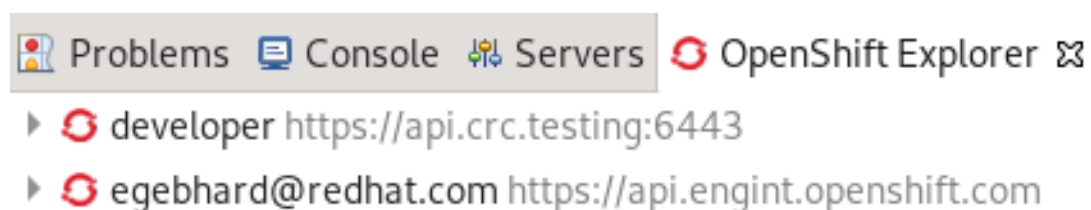
3. Click **Window** → **Show View** → **Other**.

The **Show View** window appears.



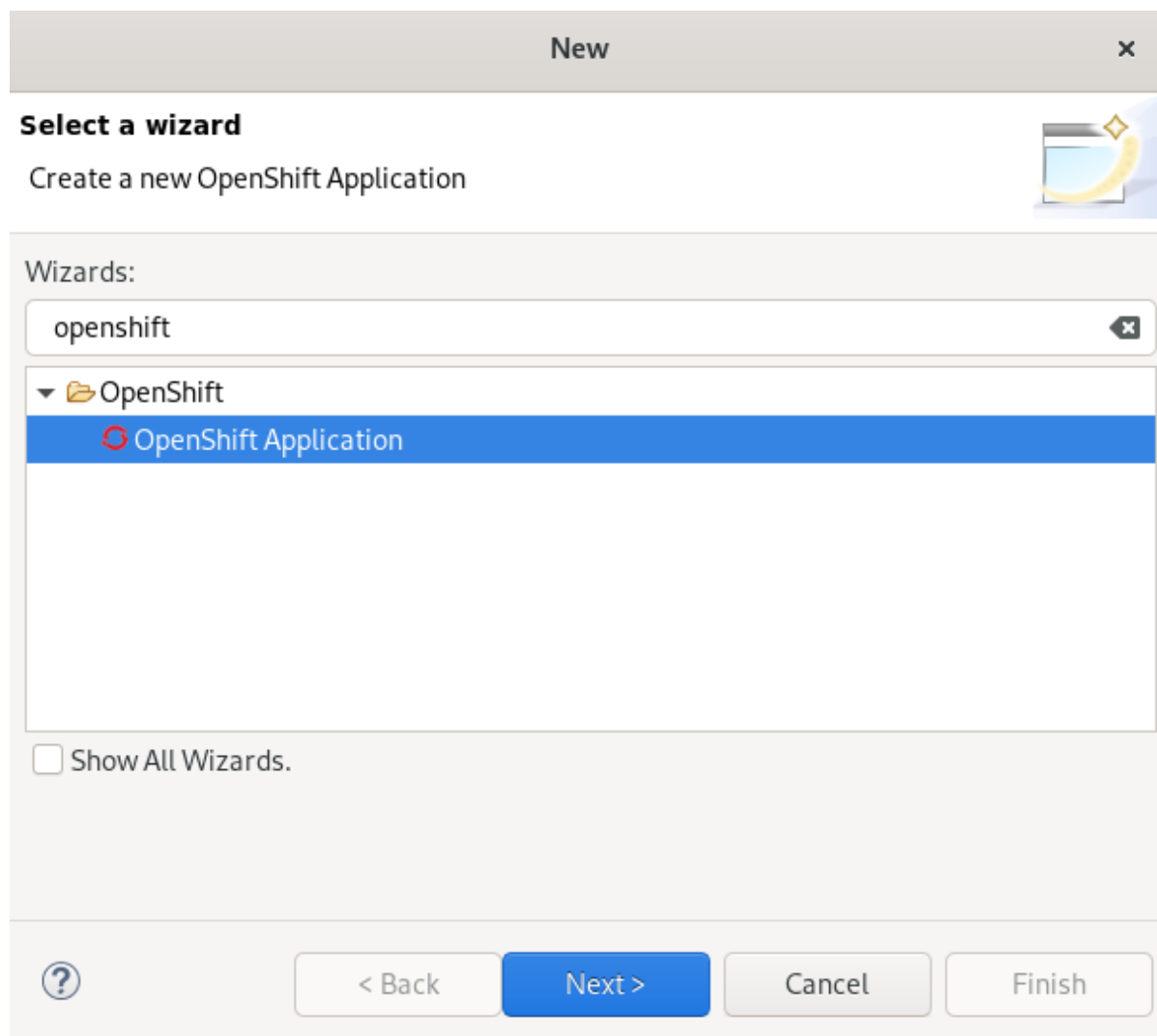
4. Enter **OpenShift** in the search field.
5. Select **OpenShift Explorer**.
6. Click **Open**.

The **OpenShift Explorer** view appears.



For information on how to set up a new OpenShift connection, visit [Creating a new OpenShift Container Platform connection](#).



7. Press **Ctrl+N**.
The **Select a wizard** window appears.



8. Enter **OpenShift** in the search field.
9. Select **OpenShift Application**.
10. Click **Next**.
The **Sign in to OpenShift** window appears.

New OpenShift Application ✕

Sign in to OpenShift

 OpenShift client oc wasn't recognized. You may download and/or configure a different OpenShift client. 
OPENSIFT

Want to try OpenShift online? You can sign up for an account [here](#)

Connection:

Server:

Authentication

Protocol:

Username:

Password:

Save password (could trigger secure storage login)

11. Provide your credentials and click **Next**.
The **Create OpenShift Project** window appears.

Create OpenShift Project


New OpenShift Project

Please provide name, display name and description.
Project names may only contains lowercase letters, numbers or dashes. They may not start or end with a dash.

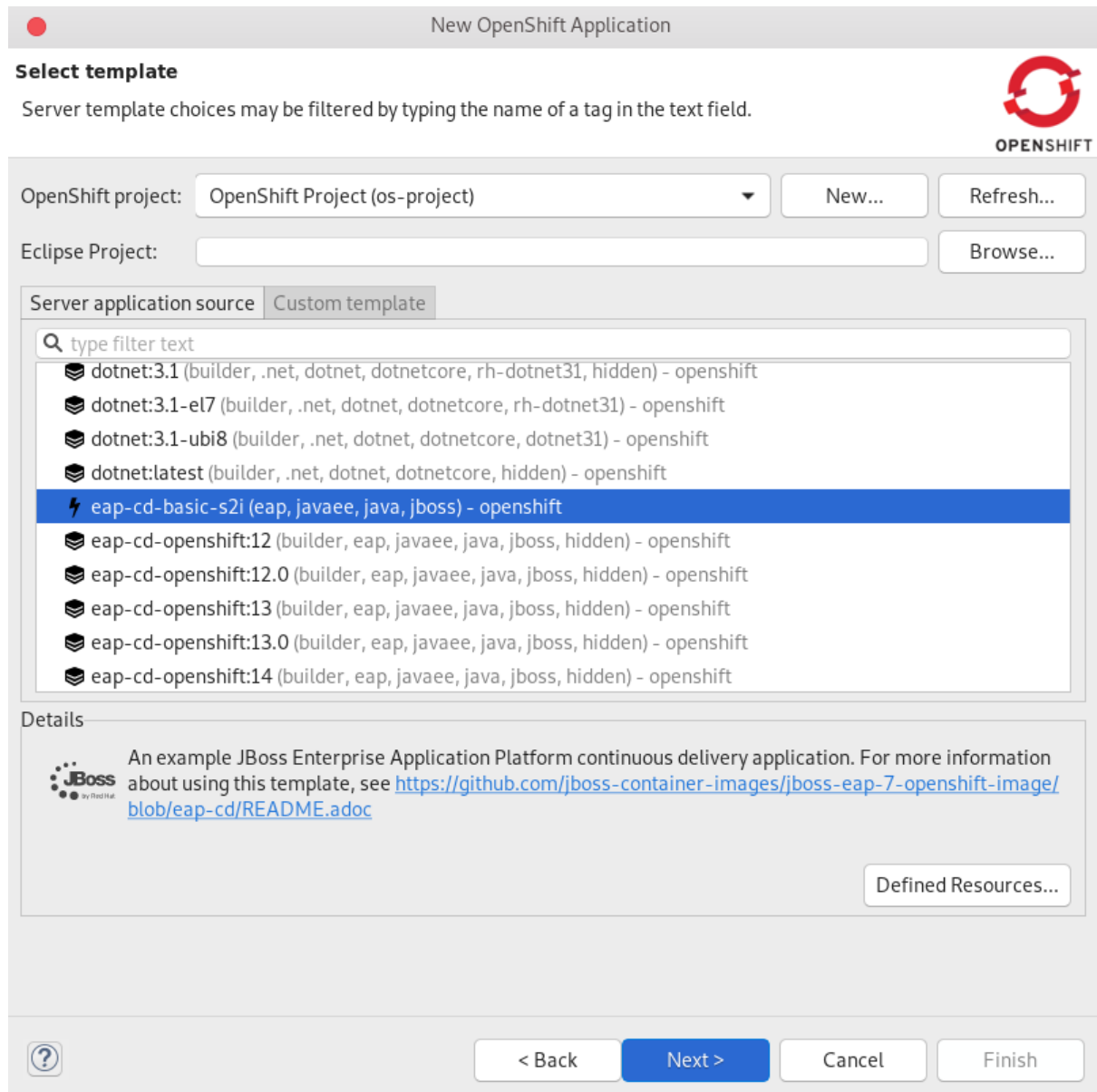
Project Name:

Display Name:


Description:



12. Name your project.
13. Click **Finish**.
The **Select template** window appears.



14. Select a template.
15. Click **Next**.
The **Template Parameters** window appears.

New OpenShift Application


Template Parameters


Edit the parameter values to be substituted into the template.

Name	Value
APPLICATION_NAME *	eap-app
ARTIFACT_DIR	
AUTO_DEPLOY_EXPLODED	false
CONTEXT_DIR	kitchensink
ENABLE_GENERATE_DEFAULT_DATASOURC	false
GALLEON_PROVISION_LAYERS	
GENERIC_WEBHOOK_SECRET *	(generated)
GITHUB_WEBHOOK_SECRET *	(generated)
IMAGE_STREAM_NAMESPACE *	openshift
JGROUPS_CLUSTER_PASSWORD *	(generated)
MAVEN_ARGS_APPEND	-Dcom.redhat.xpaas.repo.jbossorg
MAVEN_MIRROR_URL	
MEMORY_LIMIT	1Gi
NO_CLUSTER_PASSWORD *	(generated)

* = value required, click the 'Edit...' button or double-click on a value to edit it.


Details

APPLICATION_NAME
The name for the application.



16. Ensure that the template parameters are correct.
17. Click **Finish**.
The **Create Application Summary** window appears.

●
Create Application Summary



OPENSIFT

Results of creating the resources from the eap-cd-basic-s2i template.

New Resources Created:

- ✔ Service - eap-app
- ✔ Service - eap-app-ping
- ✔ Route - eap-app
- ✔ ImageStream - eap-app
- ✔ ImageStream - eap-app-build-artifacts
- ✔ BuildConfig - eap-app-build-artifacts
- ✔ BuildConfig - eap-app
- ✔ DeploymentConfig - eap-app

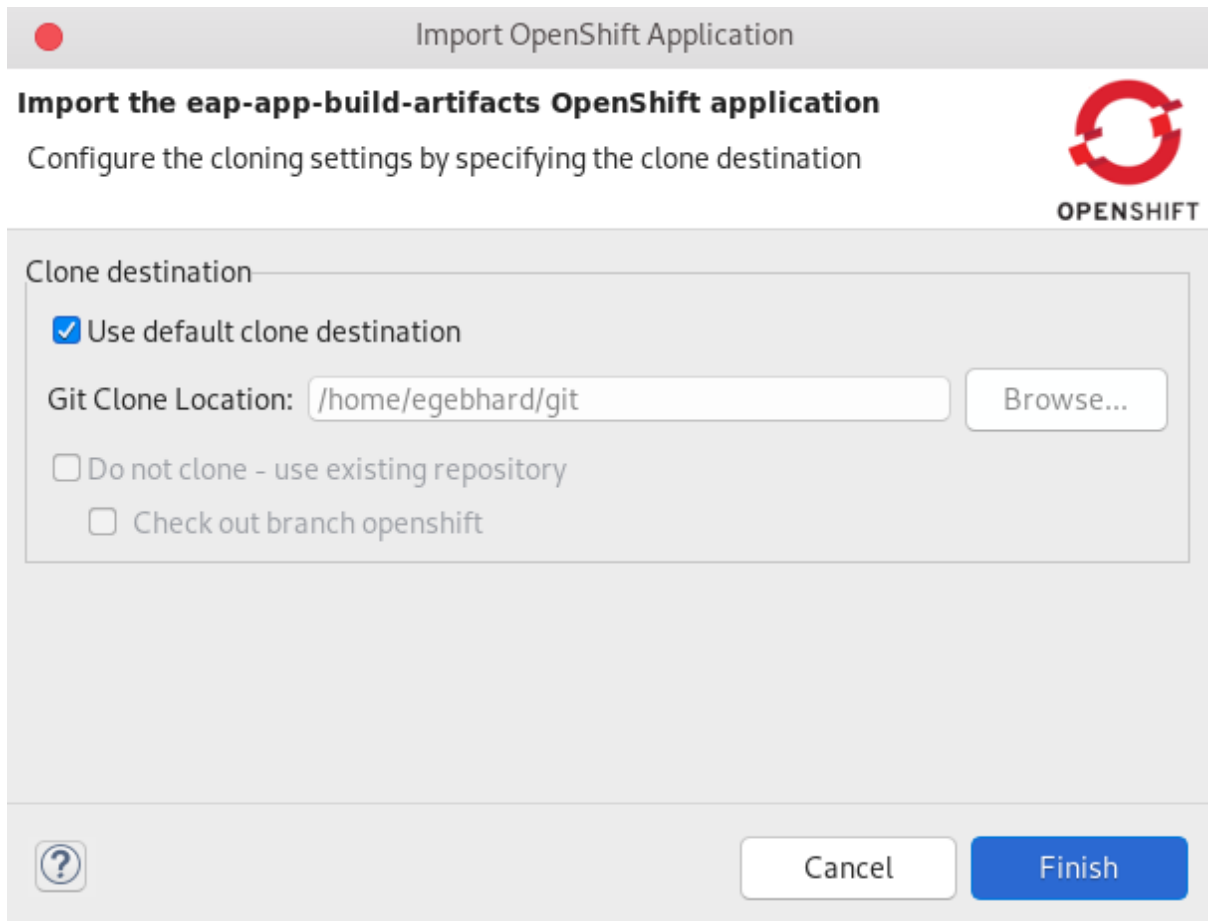
Click [here](#) for webhooks available to automatically trigger builds.

Note the following parameters required to administer your resources:

Name	Value
APPLICATION_NAME	eap-app
ARTIFACT_DIR	
AUTO_DEPLOY_EXPLODED	false
CONTEXT_DIR	kitchensink
ENABLE_GENERATE_DEFAULT_DATASOURCE	false
GALLEON_PROVISION_LAYERS	
GENERIC_WEBHOOK_SECRET	NuwdNI2E

OK

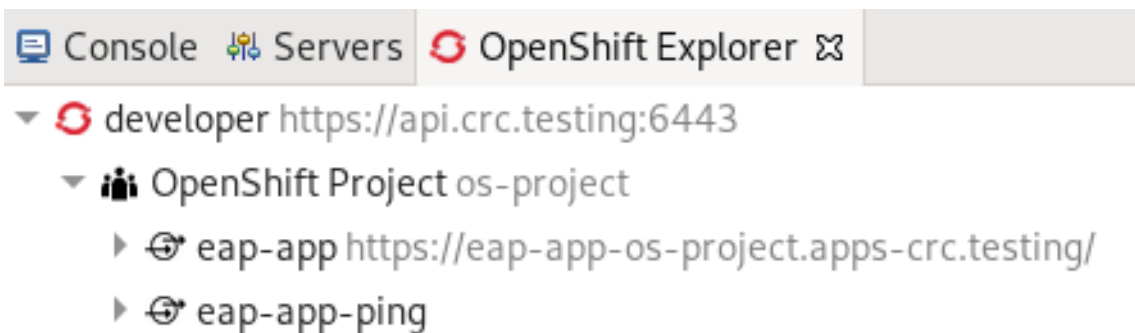
18. Ensure that the application details are correct.
19. Click **OK**.
The **Import OpenShift Application** window appears.



20. Choose the location for your git repository clone.

21. Click **Finish**.

Your newly created OpenShift project and application are now listed in the **OpenShift Explorer** view.



Additional resources

- For more information on how to perform additional tasks with OpenShift Container Platform projects and applications, see [Developing for the Cloud with OpenShift in CodeReady Studio](#).

CHAPTER 2. DEVELOPING FOR THE CLOUD WITH OPENSIFT IN CODEREADY STUDIO

2.1. CREATING AN OPENSIFT CONTAINER PLATFORM APPLICATION IN CODEREADY STUDIO

Using the OpenShift Container Platform tools you can create, import, and modify OpenShift Container Platform applications.

2.1.1. Creating a new OpenShift Container Platform connection

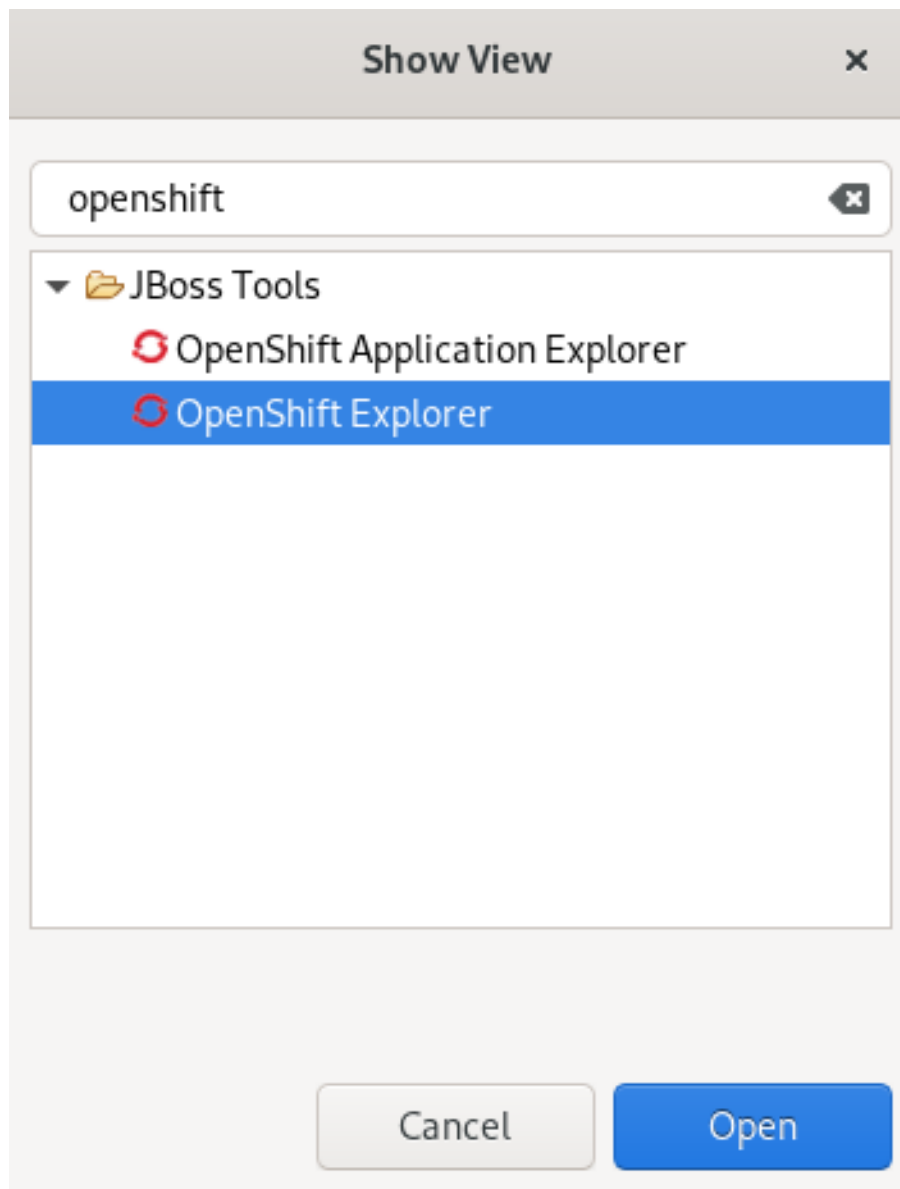
To use OpenShift tools in CodeReady Studio, you must create an OpenShift connection in the **OpenShift Explorer** view. An OpenShift connection connects CodeReady Studio to an OpenShift instance (based on OpenShift Online, Kubernetes or minishift). The connection is listed in the **OpenShift Explorer** view. You can have more than one OpenShift connection configured in CodeReady Studio.

Prerequisites

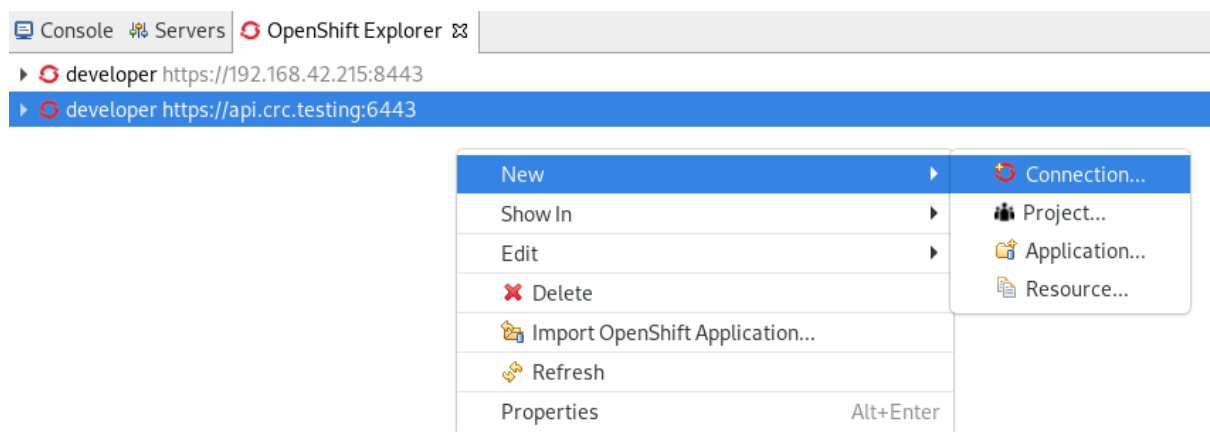
- A running OpenShift cluster.

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



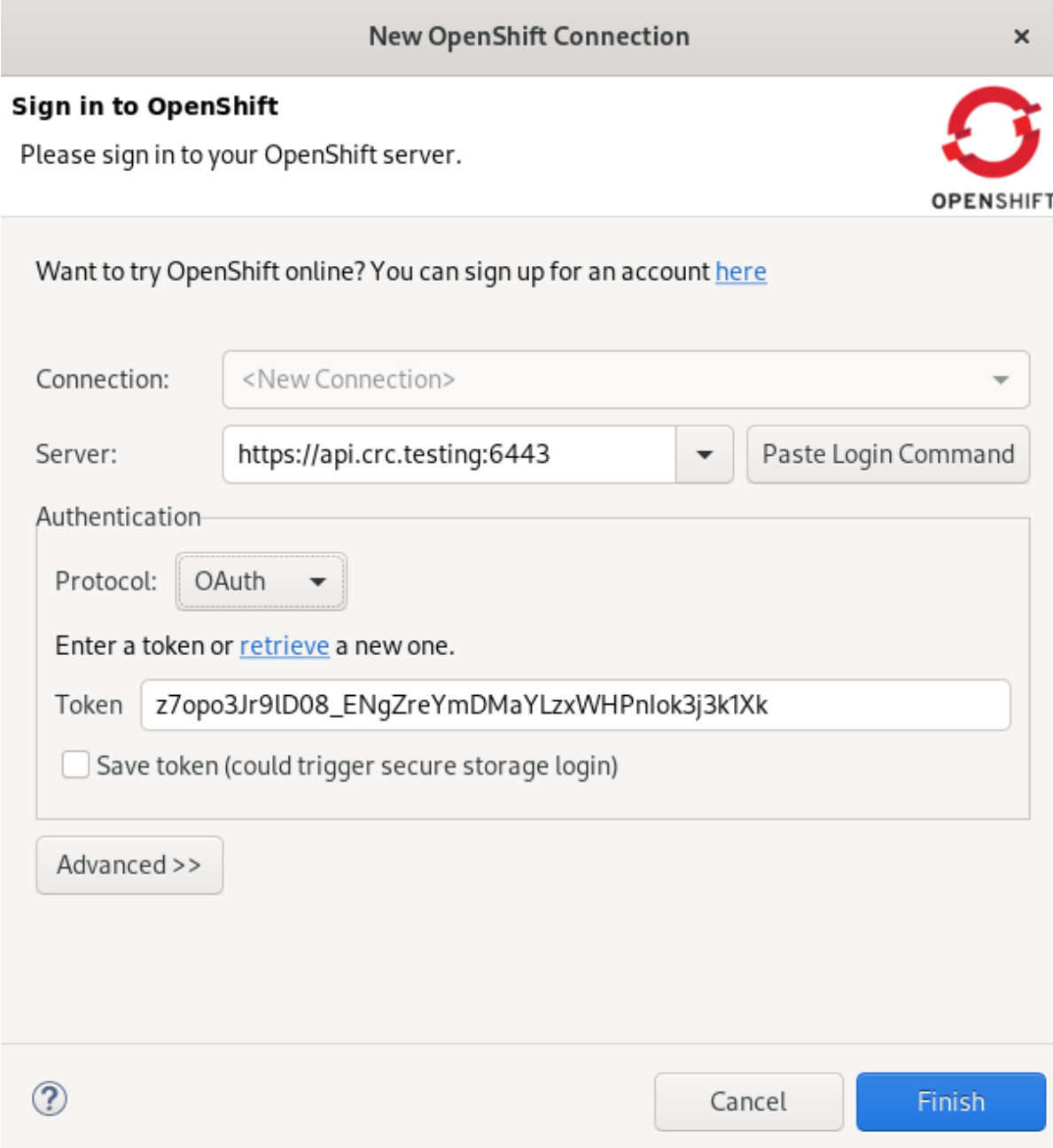
3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



6. Right-click any area in the **OpenShift Explorer**.

7. Click **New** → **Connection**.

The **Sign in to OpenShift** window appears.



New OpenShift Connection ×

Sign in to OpenShift

Please sign in to your OpenShift server.

Want to try OpenShift online? You can sign up for an account [here](#)

Connection: <New Connection>

Server: https://api.crc.testing:6443 Paste Login Command

Authentication

Protocol: OAuth

Enter a token or [retrieve](#) a new one.

Token z7opo3Jr9ID08_ENgZreYmDMaYLzxWHPnlok3j3k1Xk

Save token (could trigger secure storage login)

Advanced >>

Cancel Finish

8. Paste the URL of your OpenShift server into the **Server** field.

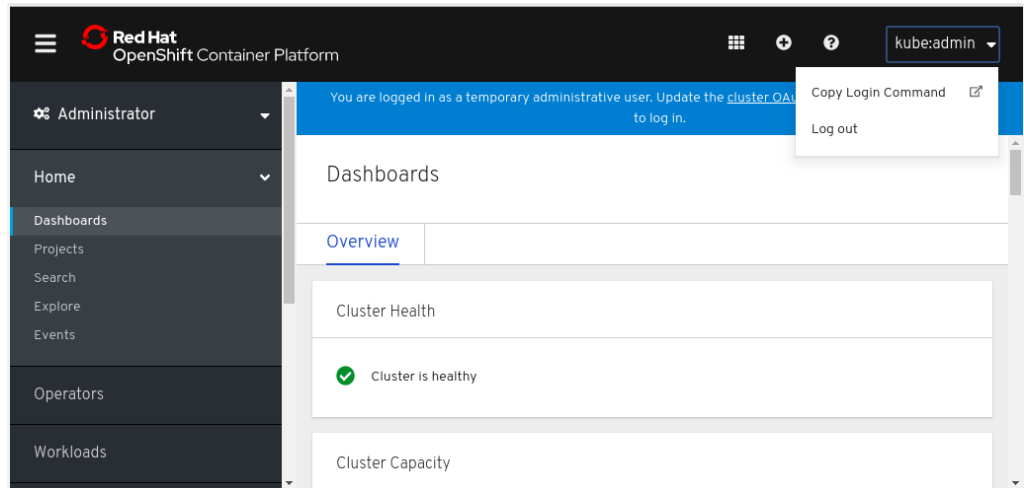
9. Authenticate with a token or login credentials.



NOTE

Alternatively, you can copy the Login Command from the OpenShift Container Platform web UI.

To get login credentials, click the **drop-down menu in the top right corner** → **Copy Login Command**.



10. Click **Finish**.

Your newly added connection is now listed in the **OpenShift Explorer** view.

2.1.2. Creating a new OpenShift Container Platform project

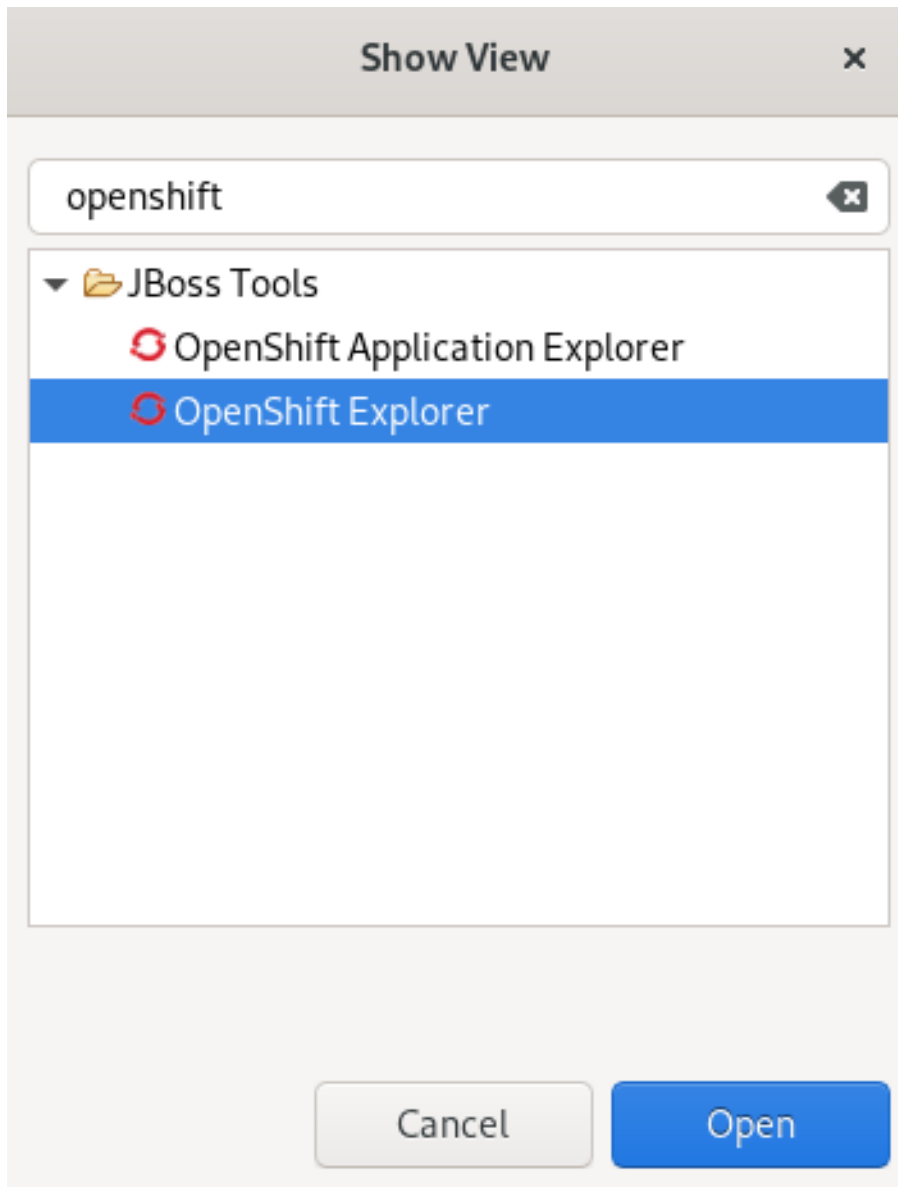
You must create an OpenShift Container Platform project, which essentially is a namespace with additional annotations, to centrally manage the access to resources for regular users of your OpenShift Container Platform.

Prerequisites

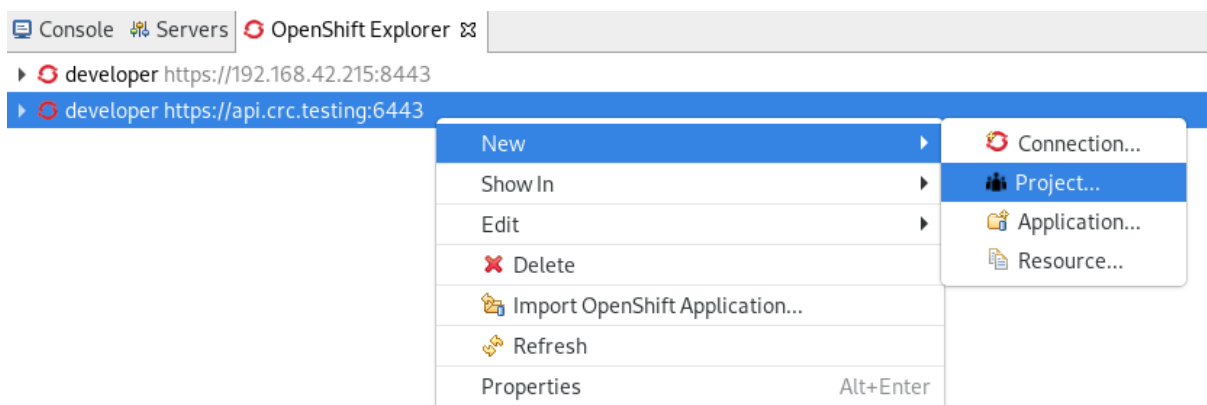
- A running OpenShift cluster.
- An OpenShift Container Platform connection.
For more information on how to create an OpenShift Container Platform connection, see [Creating a new OpenShift Container Platform connection](#).

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.




6. Right-click the **OpenShift Container Platform** connection → **New** → **Project**.
The **New OpenShift Project** window appears.

Create OpenShift Project

New OpenShift Project

Please provide name, display name and description.
Project names may only contains lowercase letters, numbers or dashes. They may not start or end with a dash.



OPENSHIFT

Project Name:

Display Name:

Description:

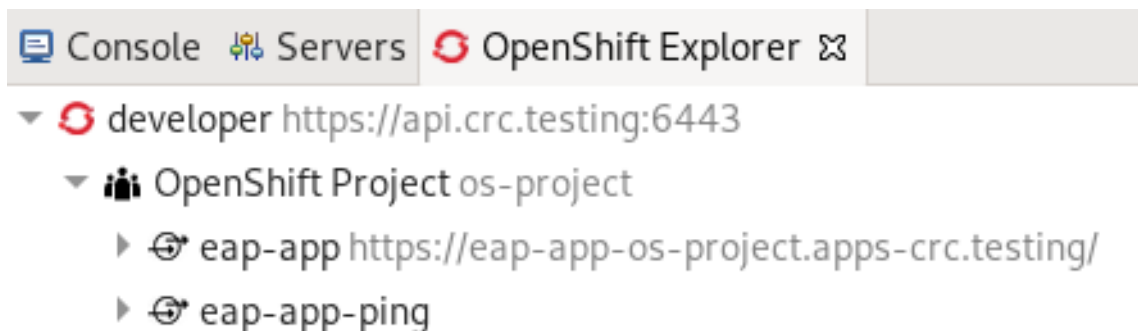
?

Cancel
Finish

7. Name your project.

8. Click **Finish**.

Your newly created OpenShift project is now listed in the **OpenShift Explorer** view.



2.1.3. Creating a new OpenShift Container Platform application

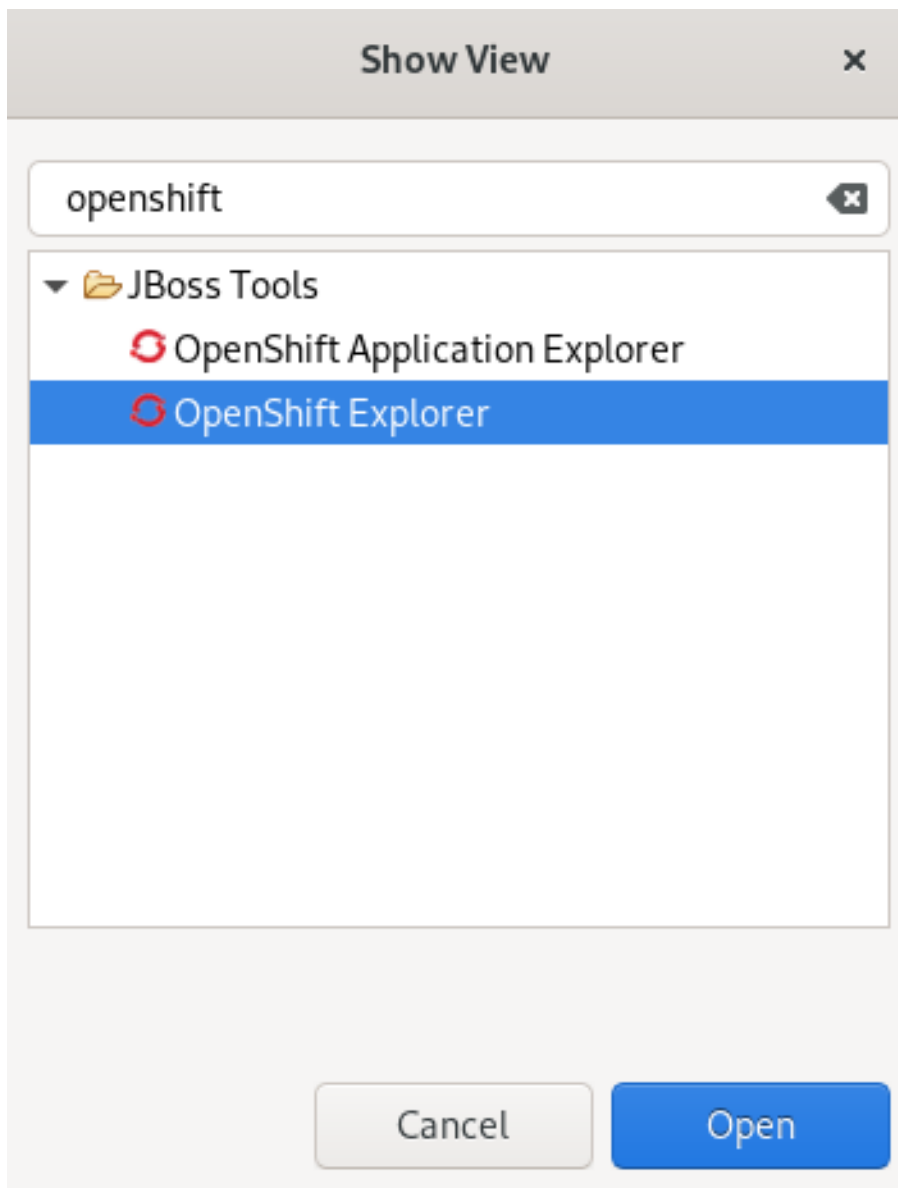
You can use the **OpenShift Application** wizard in CodeReady Studio to create OpenShift Container Platform applications from default or custom templates.

Prerequisites

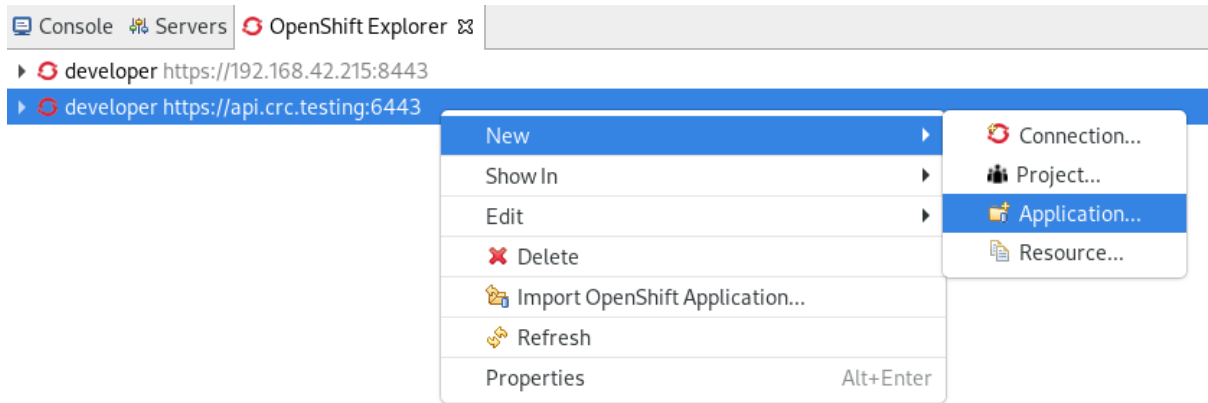
- A running OpenShift cluster.
- An OpenShift Container Platform connection.
For more information on how to create an OpenShift Container Platform connection, see [Creating a new OpenShift Container Platform connection](#) .
- An OpenShift Container Platform project.
For more information on how to create a new OpenShift Container Platform project, see [Creating a new OpenShift Container Platform project](#) .

Procedure

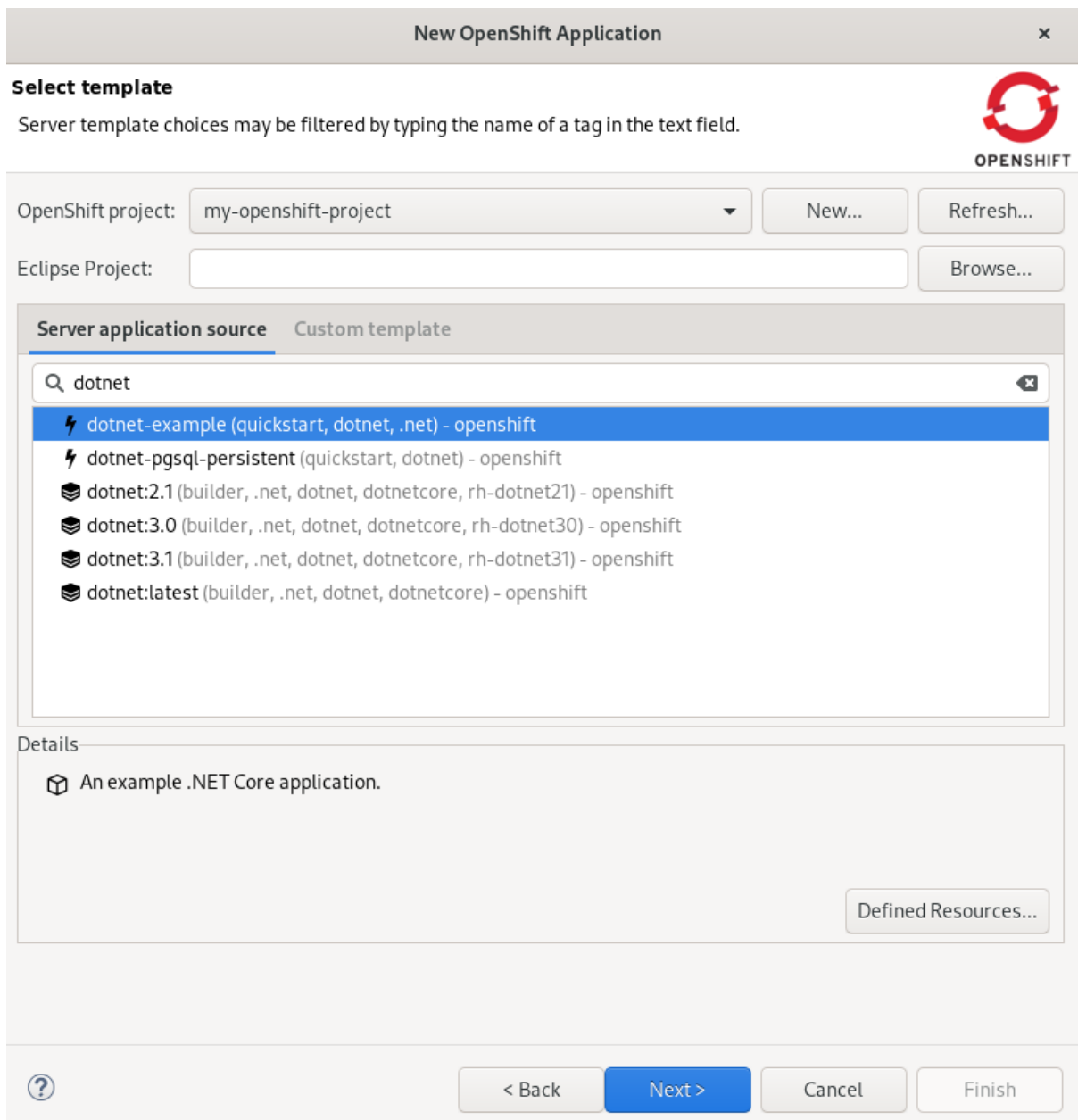
1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.




3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



- Right-click the **OpenShift Container Platform connection** → **New** → **Application**. The **Select template** window appears.



- Select a template.
- Click **Next**. The **Template Parameters** window appears.

New OpenShift Application


Template Parameters


Edit the parameter values to be substituted into the template.

Name	Value
APPLICATION_NAME *	eap-app
ARTIFACT_DIR	
AUTO_DEPLOY_EXPLODED	false
CONTEXT_DIR	kitchensink
ENABLE_GENERATE_DEFAULT_DATASOURCE	false
GALLEON_PROVISION_LAYERS	
GENERIC_WEBHOOK_SECRET *	(generated)
GITHUB_WEBHOOK_SECRET *	(generated)
IMAGE_STREAM_NAMESPACE *	openshift
JGROUPS_CLUSTER_PASSWORD *	(generated)
MAVEN_ARGS_APPEND	-Dcom.redhat.xpaas.repo.jbossorg
MAVEN_MIRROR_URL	
MEMORY_LIMIT	1Gi
NO_CLUSTER_PASSWORD *	(generated)

* = value required, click the 'Edit...' button or double-click on a value to edit it.

Details

APPLICATION_NAME
The name for the application.




9. Ensure that the template parameters are correct.
10. Click **Next**.
The **Resource Labels** window appears.

New OpenShift Application

Resource Labels

Add or edit the labels to be added to each resource. Labels are used to organize, group, or select objects and resources, such as pods and



OPENSIFT

Labels


Key	Value
-----	-------

Add...
Edit...
Remove...

? < Back Next > Cancel Finish

11. Click **Add** to add labels.
12. Click **Finish**.
The **Create Application Summary** window appears.

Create Application Summary
✕



OPENSIFT

Results of creating the resources from the dotnet-example template.

New Resources Created:

- ✔ Route - dotnet-example
- ✔ Service - dotnet-example
- ✔ ImageStream - dotnet-example
- ✔ BuildConfig - dotnet-example
- ✔ DeploymentConfig - dotnet-example

▼ Resource Details

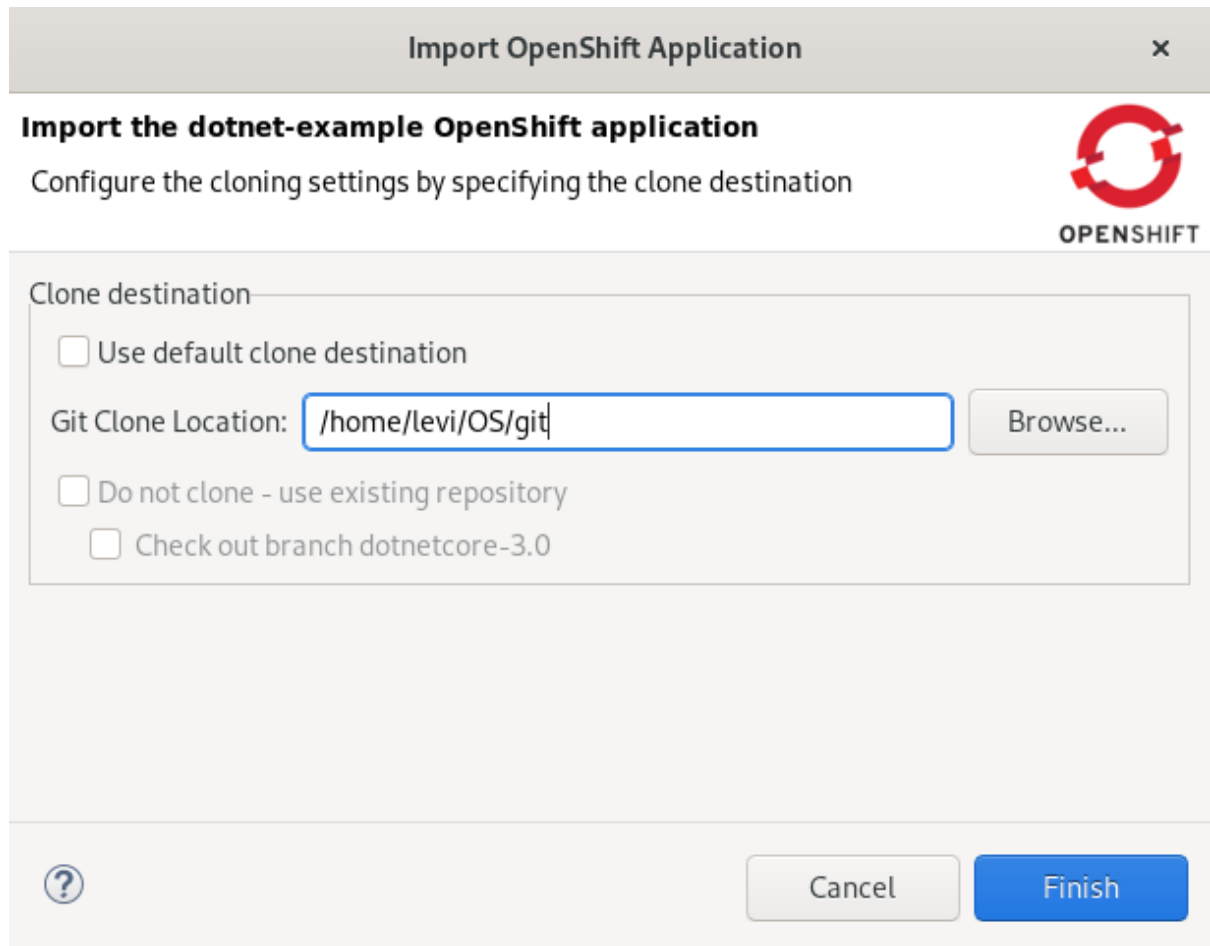
Click [here](#) for webhooks available to automatically trigger builds.

Note the following parameters required to administer your resources:

Name	Value
APPLICATION_DOMAIN	
CONTEXT_DIR	
DOTNET_ASSEMBLY_NAME	
DOTNET_CONFIGURATION	Release
DOTNET_IMAGE_STREAM_TAG	dotnet:3.0
DOTNET_NPM_TOOLS	
DOTNET_PUBLISH_READYTORUN	

OK

13. Ensure that the application details are correct.
14. Click **OK**.
The **Import OpenShift Application** window appears.



15. Choose the location for your git repository clone.

16. Click **Finish**.

Your newly created OpenShift Container Platform application is now listed in the **OpenShift Explorer** view.

Additional Resources

- For more information about using and creating templates with OpenShift Container Platform, see the upstream documentation [Official OKD documentation](#), [Using templates](#).

2.1.4. Importing an existing OpenShift Container Platform application into CodeReady Studio

The **OpenShift Explorer** view in CodeReady Studio lists applications associated with your OpenShift Container Platform accounts. You can import the source code for these applications individually into CodeReady Studio using the **Import OpenShift Application** wizard. After the application is imported, you can easily modify the application source code, build the application, and view it in a web browser.

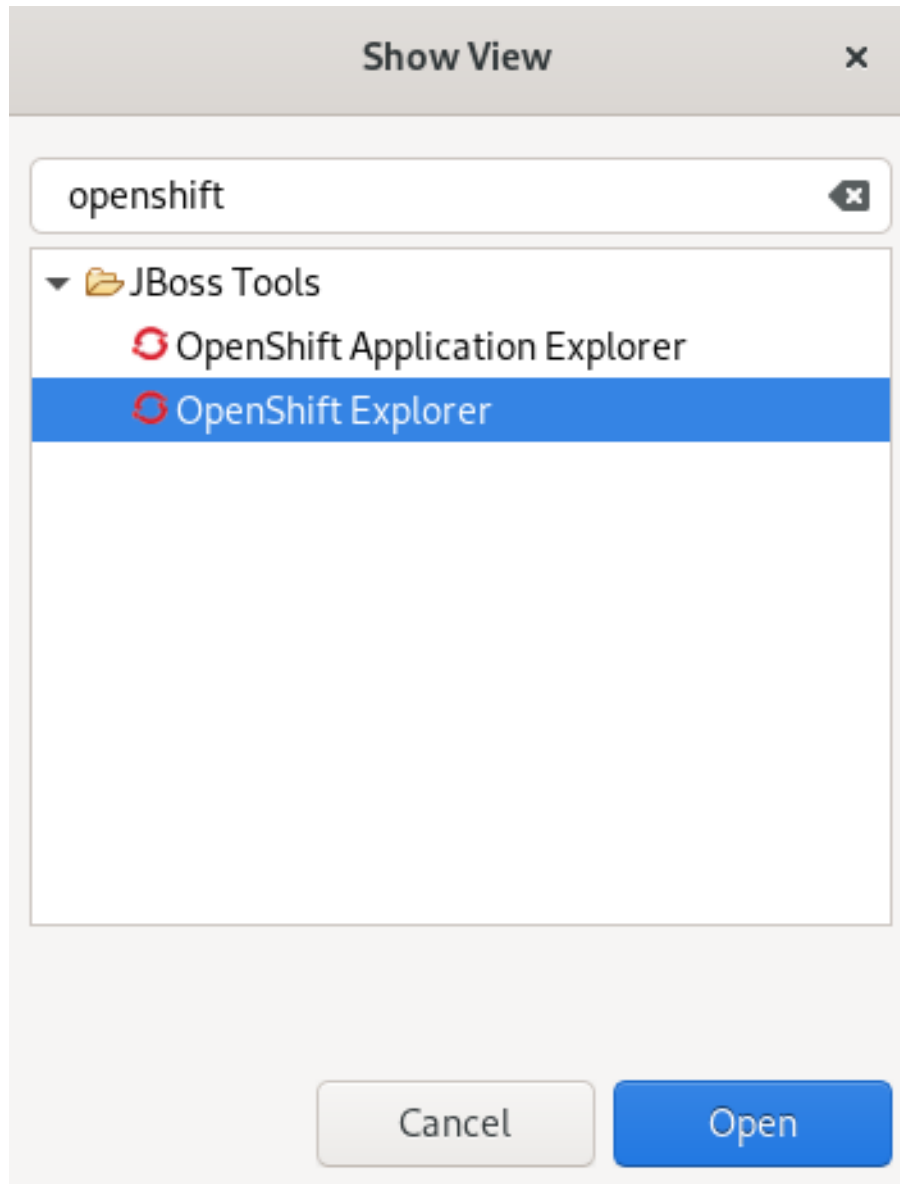
Prerequisites

- The application that you are importing into CodeReady Studio has its source specified in the **build config** file.
- A running OpenShift cluster.
- An OpenShift Container Platform connection.

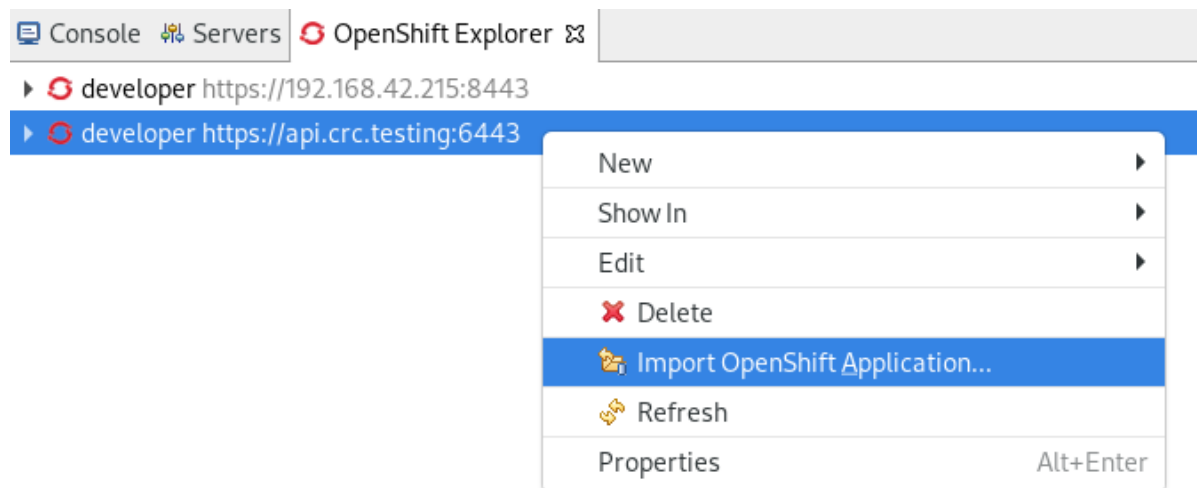
For more information on how to create an OpenShift Container Platform connection, see [Creating a new OpenShift Container Platform connection](#).

Procedure

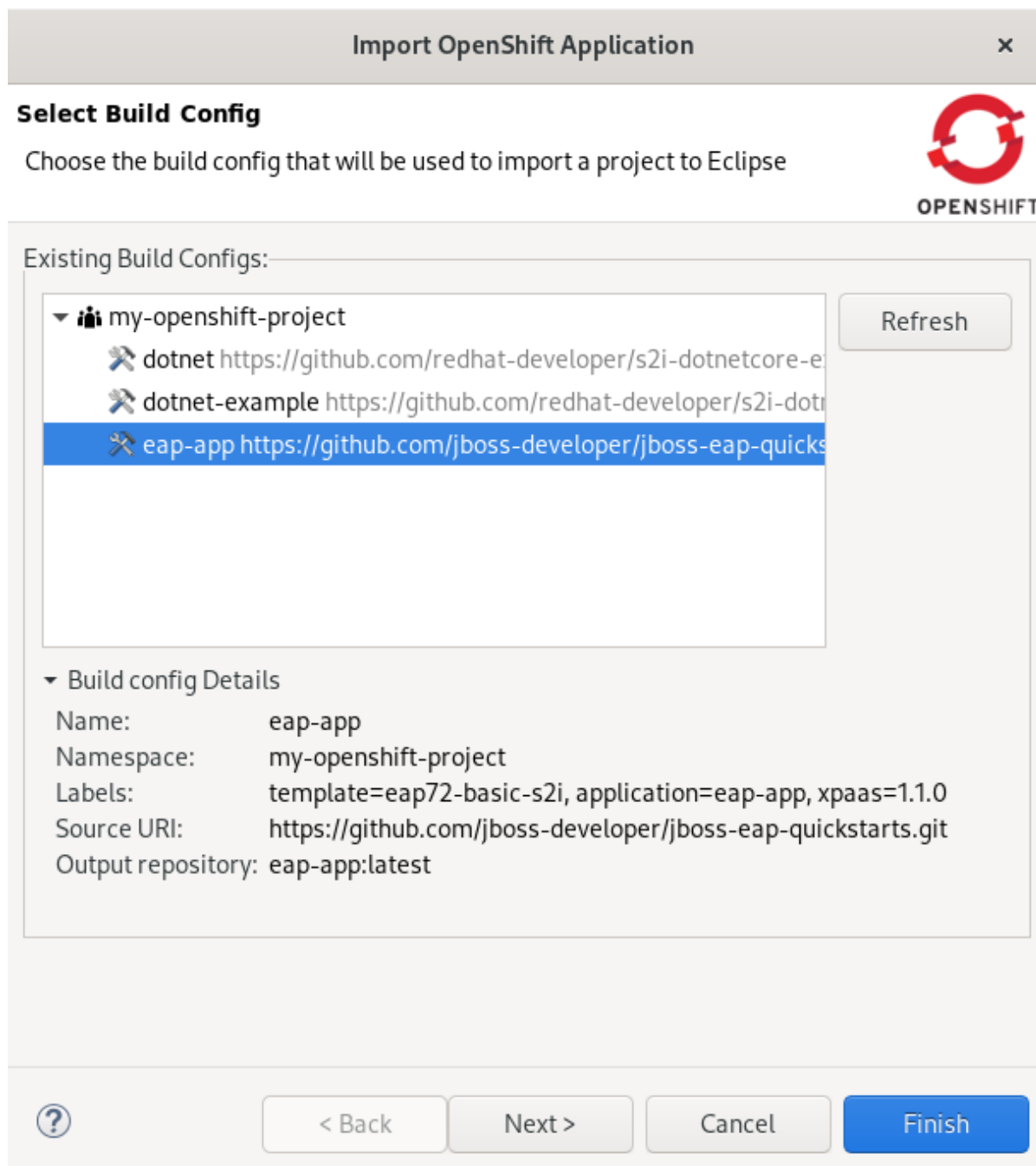
1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



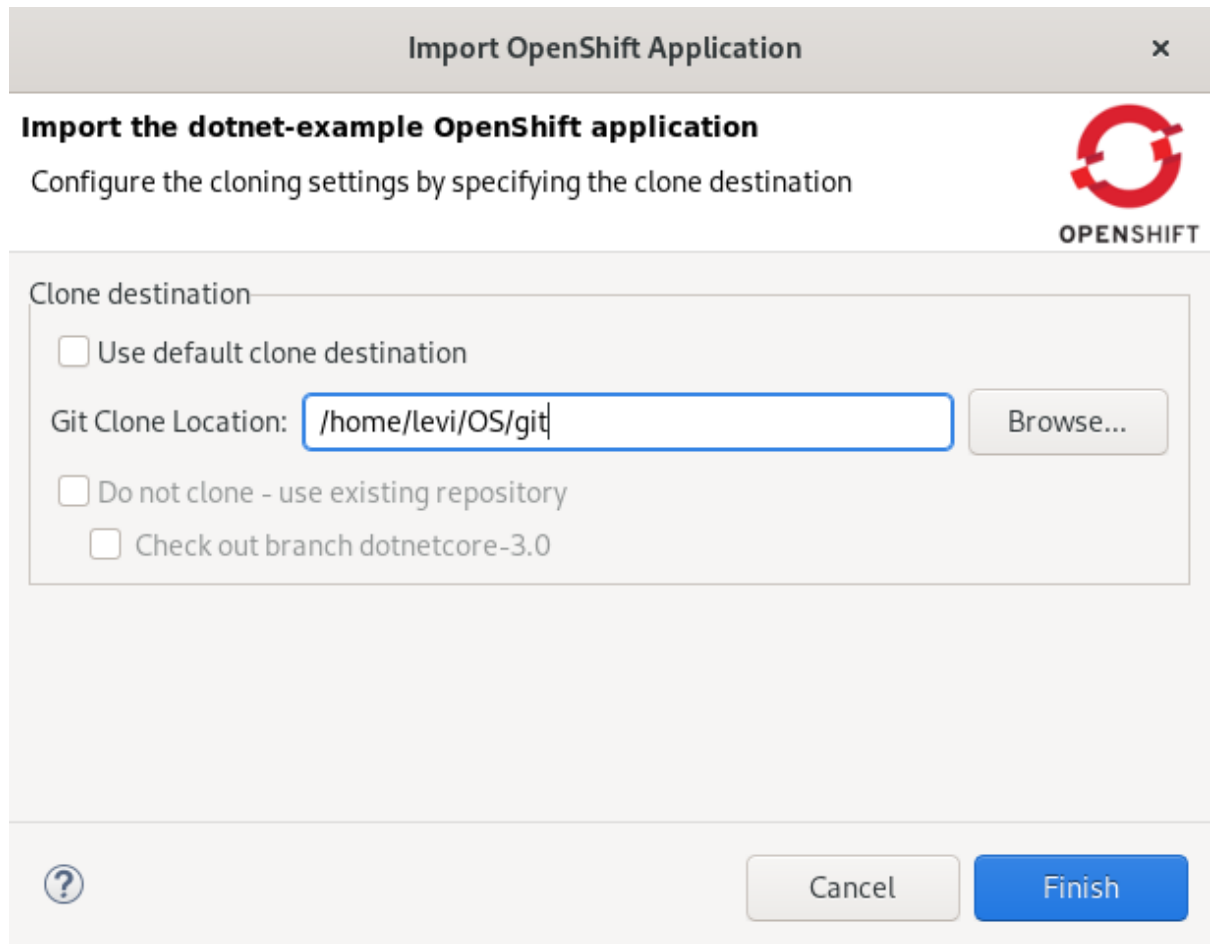
3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



6. Right-click your **OpenShift Container Platform** connection → **Import OpenShift Application**. The **Select Build Config** window appears.



7. Select the application you want to import.
8. Click **Next**.
The **Import OpenShift Application** window appears.



9. Select your **Git Clone Location**

10. Click **Finish**.

Your newly imported OpenShift Container Platform application is now listed in the **OpenShift Explorer** view.

2.1.5. Deploying an application using the server adapter

The server adapter enables you to publish the changes that you made in your workspace project to the running OpenShift application on the OpenShift instance. It enables incremental deployment of applications directly into the deployed pods on OpenShift. You can use the server adapter to push changes in your application directly to the running OpenShift application without committing the source code to the Git repository.

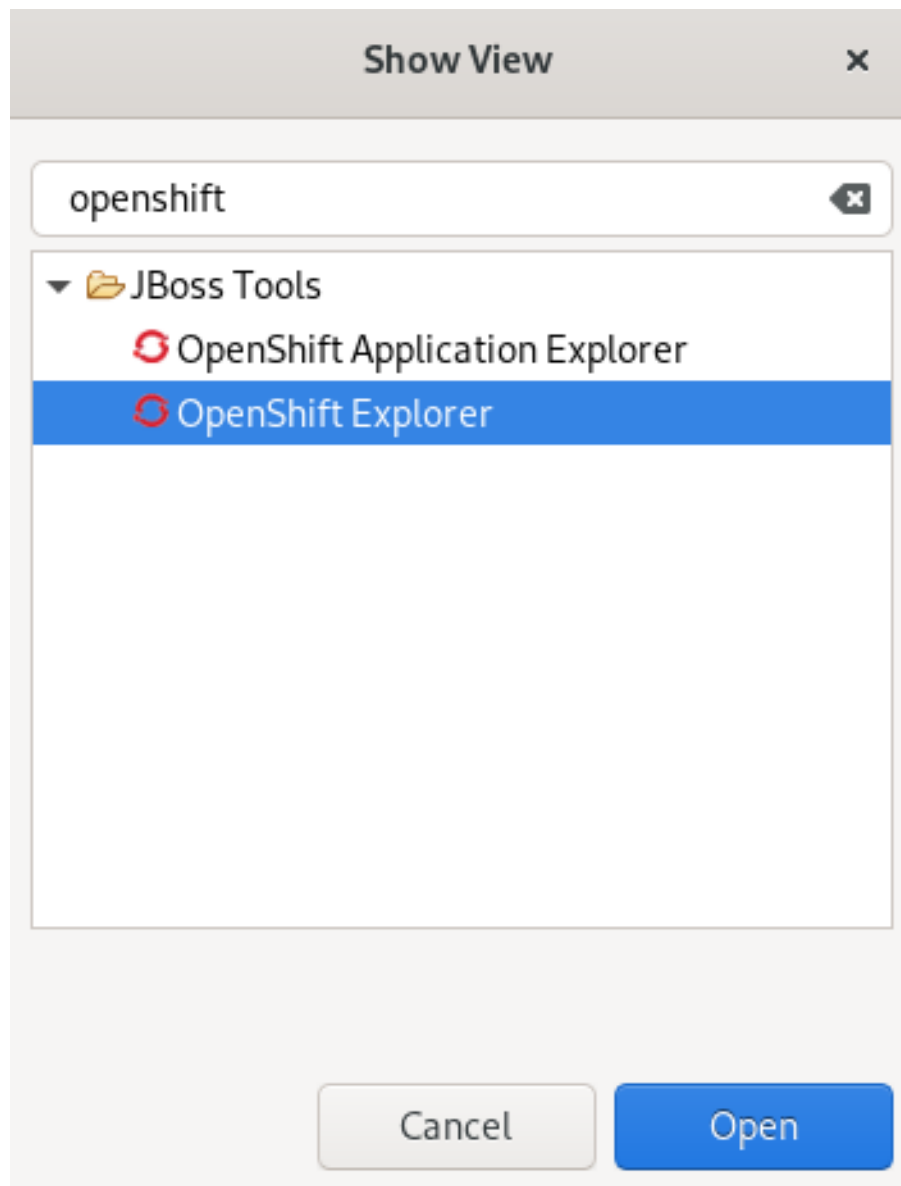
Prerequisites

- A running OpenShift cluster.
- An OpenShift Container Platform connection.
For more information on how to create an OpenShift Container Platform connection, see [Creating a new OpenShift Container Platform connection](#).

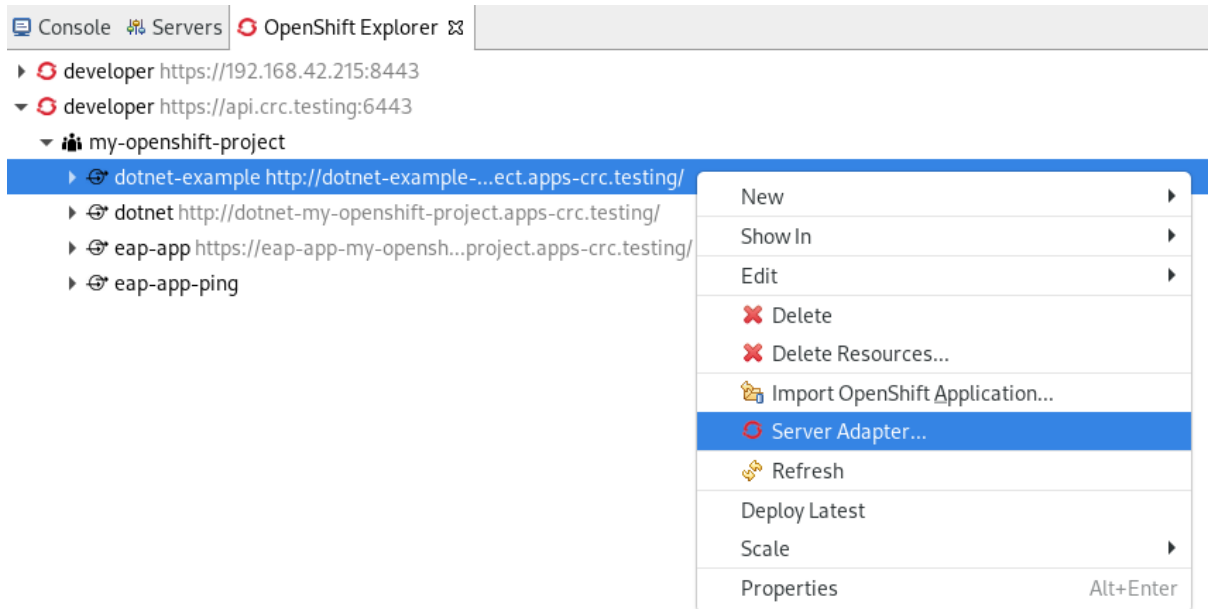
Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.

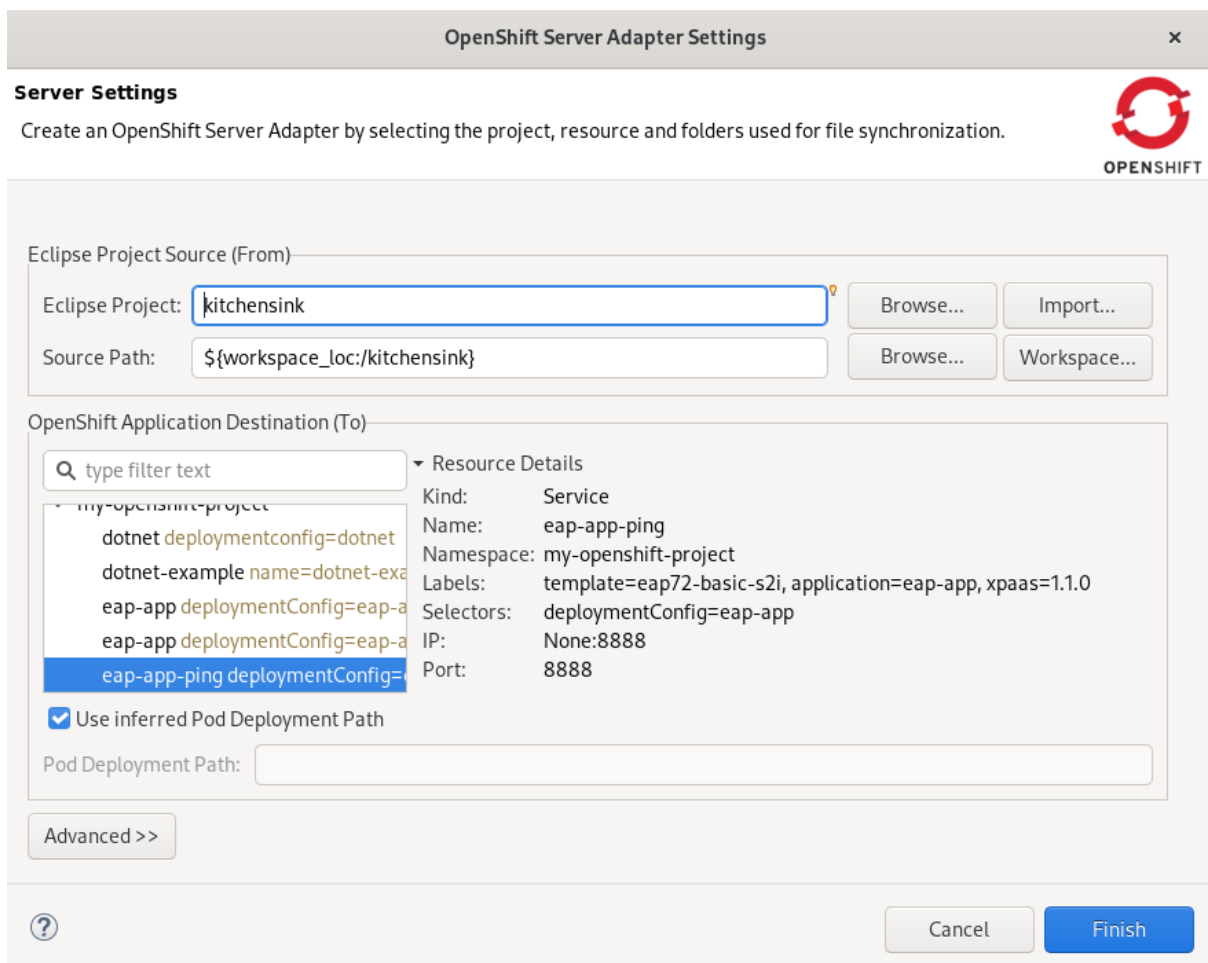
The **Show View** window appears.



3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



6. Expand the OpenShift Container Platform connection.
7. Right-click your **application** → **Server Adapter**.
The **Server Settings** window appears.





NOTE

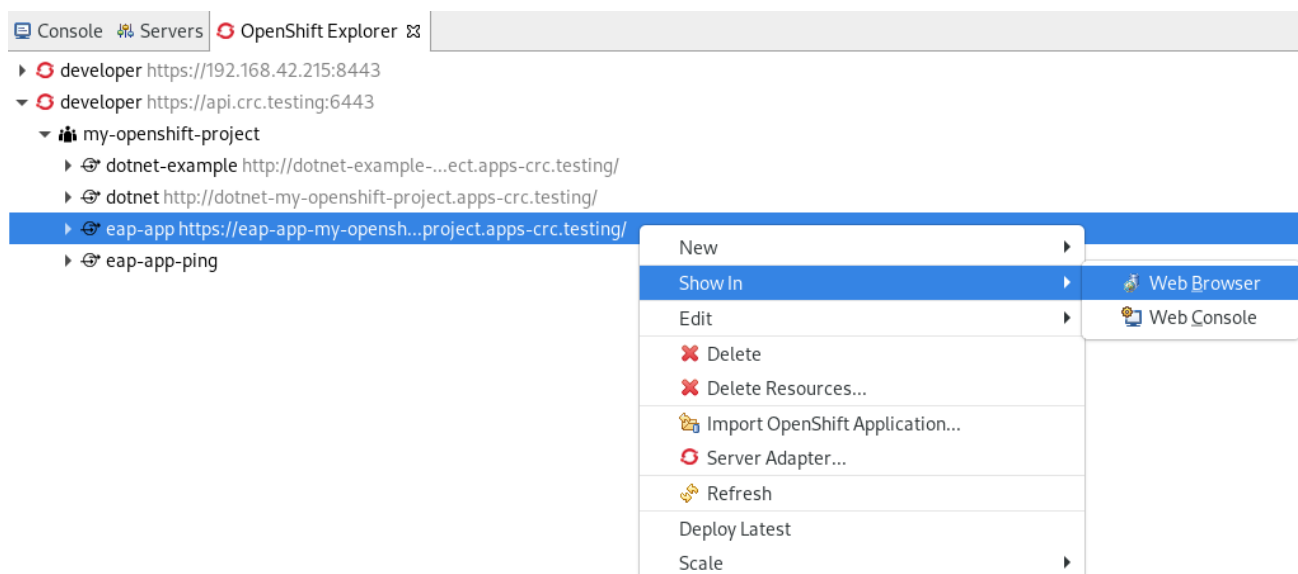
If you are using EAP 7.3, you need to set the path for the deployment of your server adapter due to changes in the templates.

To do so, uncheck the **Use inferred Pod Deployment Path** checkbox and set the Pod Deployment Path field to **/opt/eap/standalone/deployments/**.

8. Click **Finish**.

The **Servers** view appears, starting your server adapter.

To open your application in a browser, right-click **application** → **Show In** → **Web Browser**.



The CodeReady Studio built-in web browser opens, displaying your application.

2.1.6. Deleting an OpenShift Container Platform project

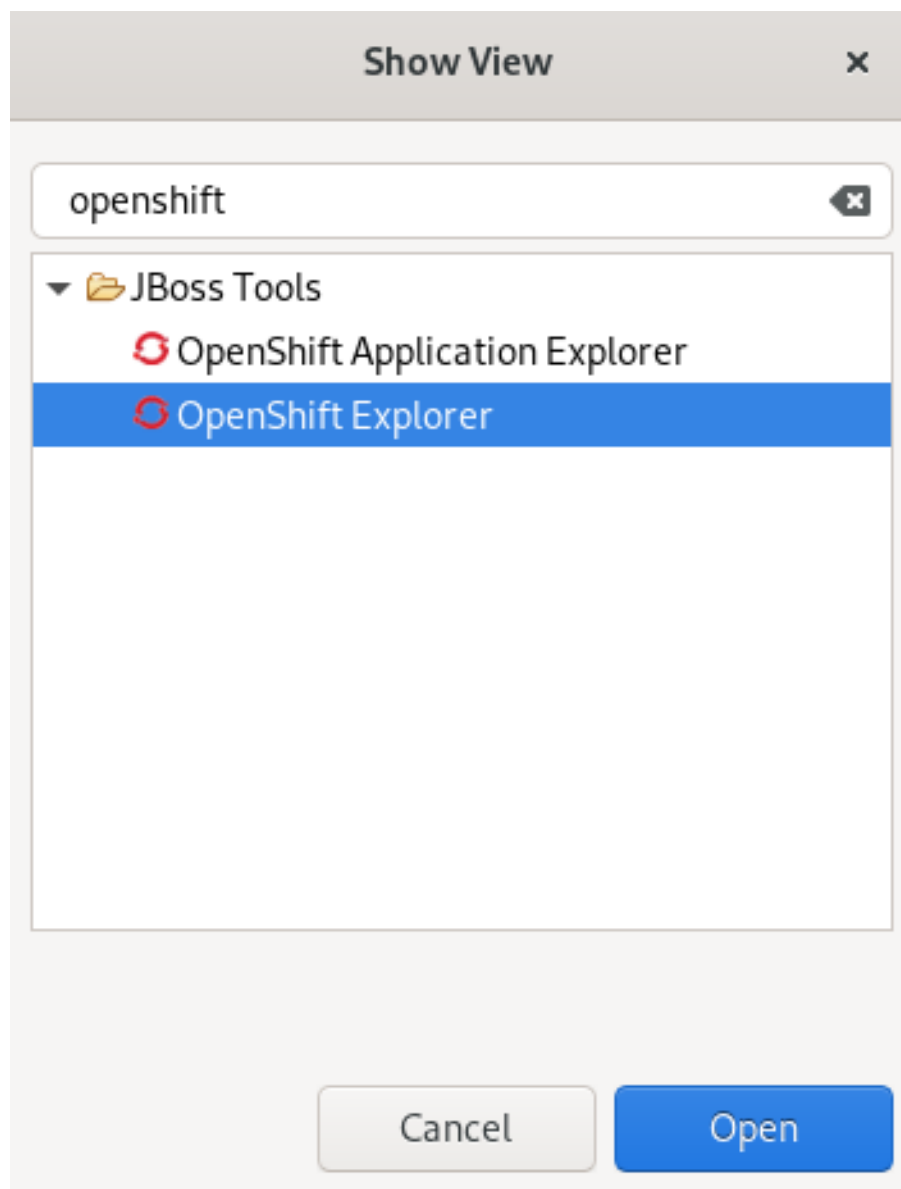
You may choose to delete a project from the workspace for a fresh start in project development or after you have concluded development in a project. When you delete a project, all resources associated with the project are deleted as well.

Prerequisites

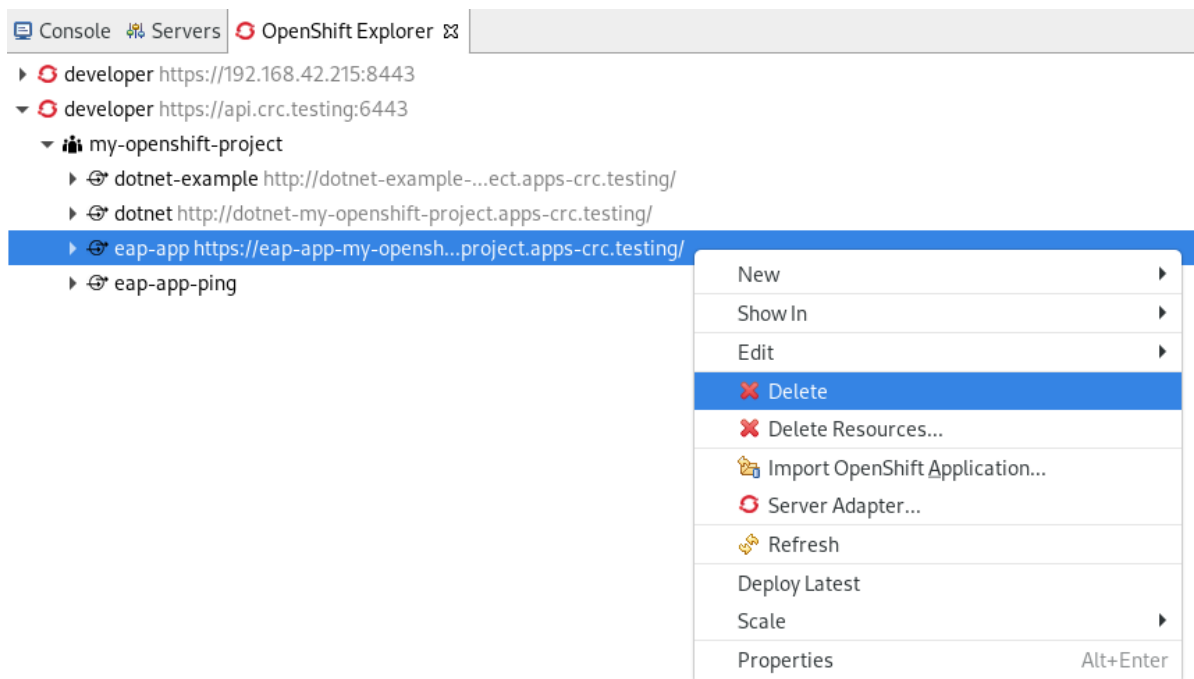
- An existing OpenShift Container Platform project.

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



6. Expand the OpenShift Container Platform connection.
7. Right-click your **project** → **Delete**.
A **Delete OpenShift Resource** window prompts you for consent.
8. Click **OK**.

Your project is now deleted.

2.2. SETTING UP AND REMOTELY MONITORING AN OPENSHIFT CONTAINER PLATFORM APPLICATION IN CODEREADY STUDIO

CodeReady Studio allows users to set up a connection to a remote instance of OpenShift Container Platform and use application and build logs to troubleshoot and monitor running applications.

Prerequisites

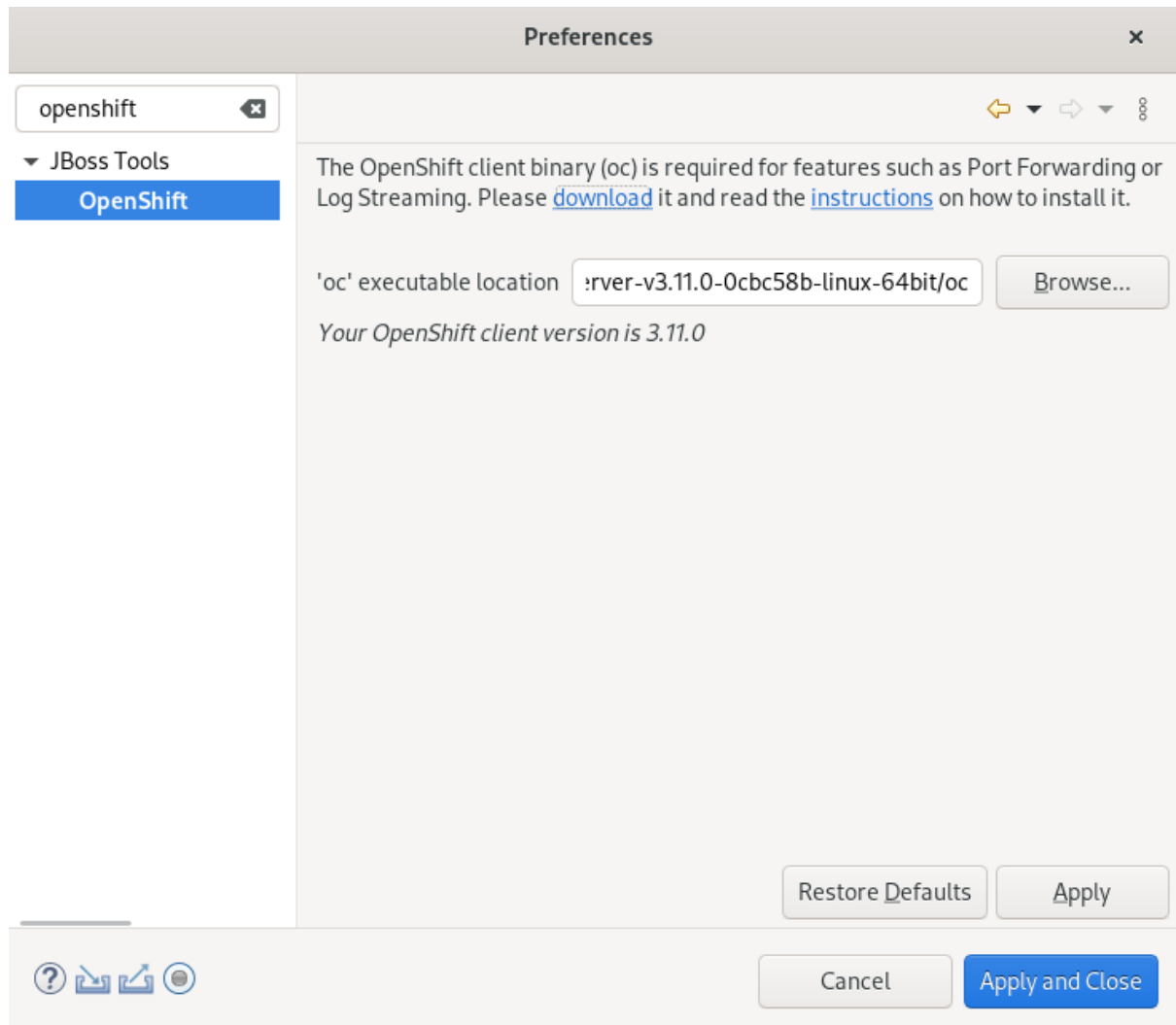
- A running OpenShift cluster.
- An OpenShift Container Platform connection.
For more information on how to create an OpenShift Container Platform connection, see [Creating a new OpenShift Container Platform connection](#).

2.2.1. Setting up OpenShift Client Binaries

Before setting up port forwarding or streaming application and build logs, set up OpenShift Client Binaries.

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Preferences**.
The **Preferences** window appears.



3. Enter OpenShift in the search field.
4. Select OpenShift.
5. Click **Browse** to locate the **oc** executable.
6. Click **Apply and Close**.

OpenShift Client Binaries are now set up.

2.2.2. Setting up Port Forwarding

Using the **Application Port Forwarding** window, you can connect local ports to their remote counterparts to access data or debug your application.

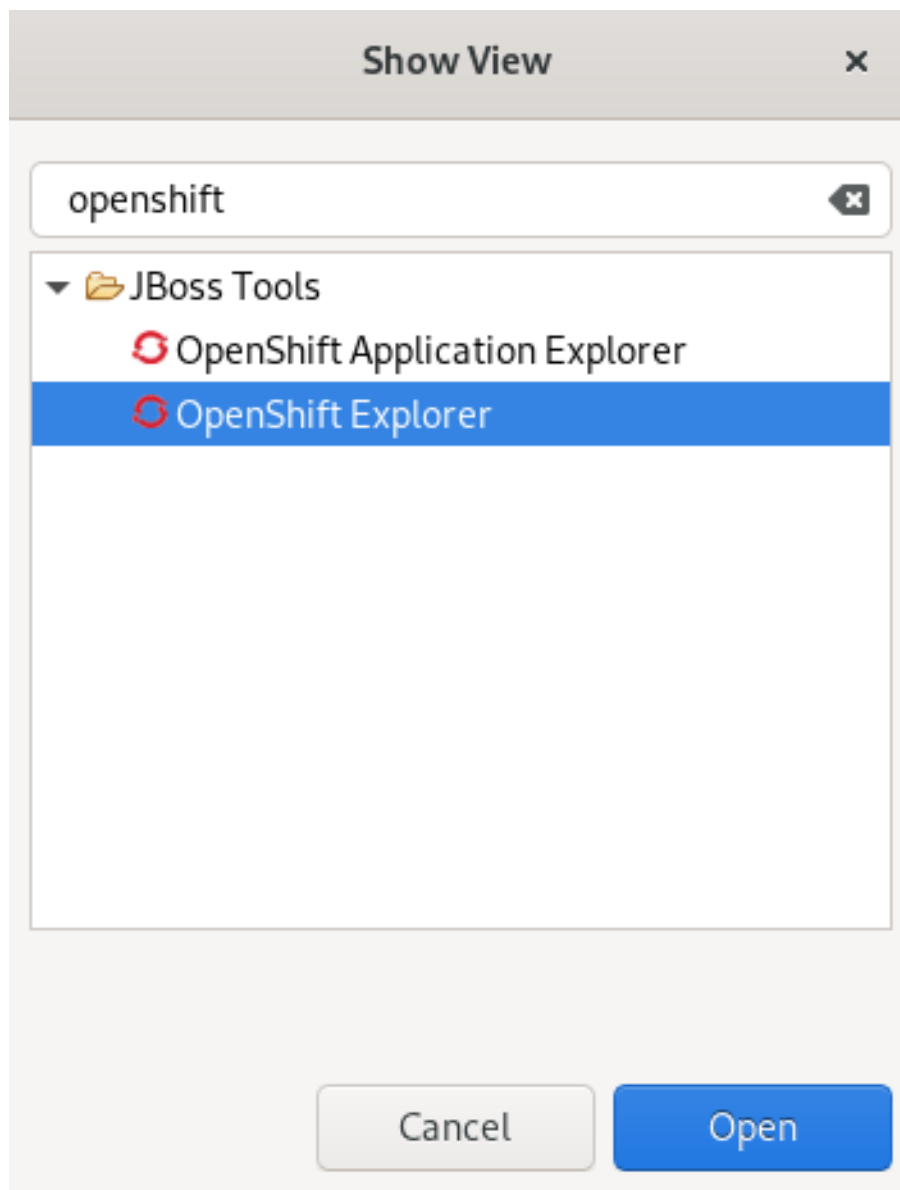
Port forwarding automatically stops due to any of the following reasons:

- The OpenShift Container Platform connection terminates
- CodeReady Studio shuts down
- The workspace is changed

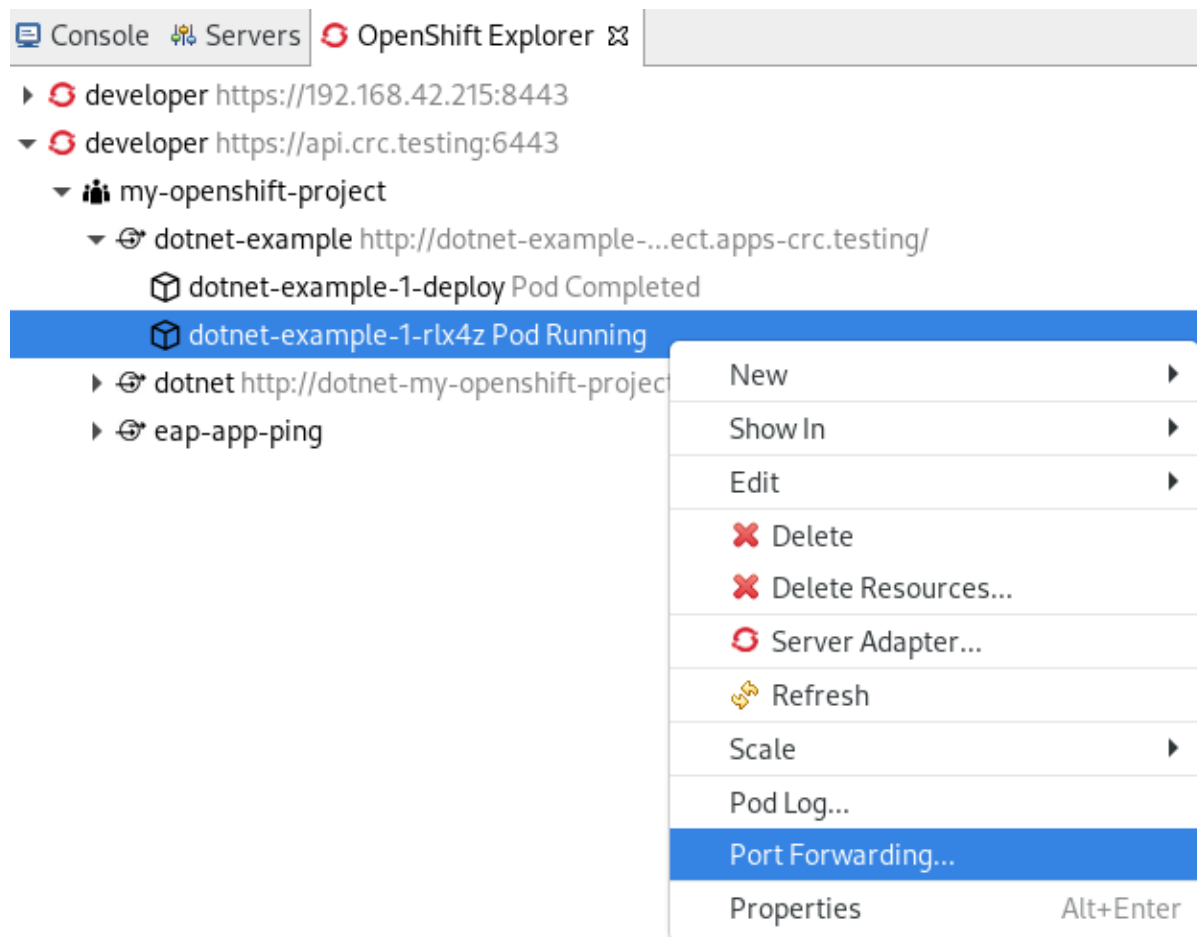
Port forwarding must be enabled each time to connect to OpenShift Container Platform from CodeReady Studio.

Procedure

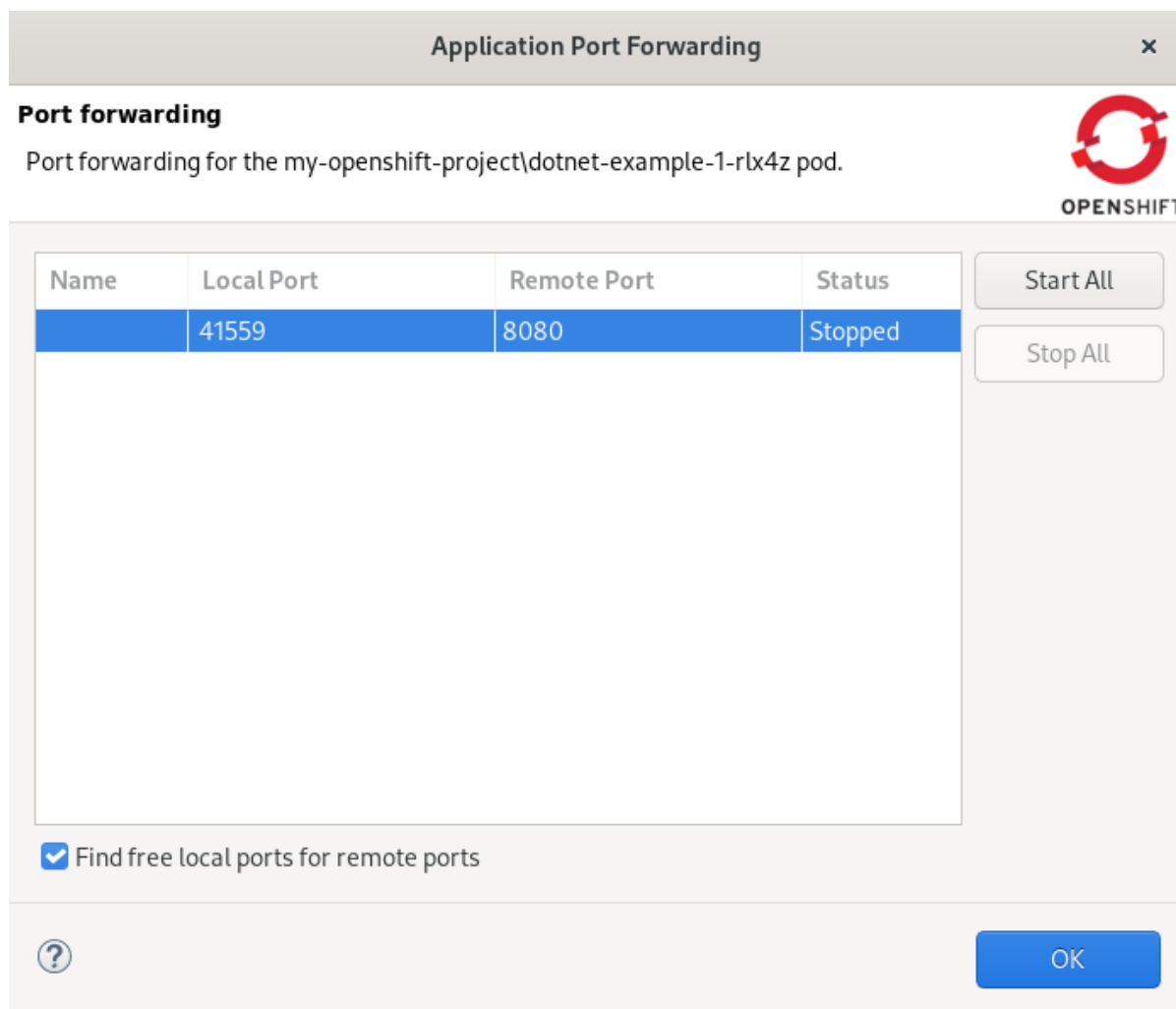
1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



- Expand the OpenShift Container Platform connection.
- Right-click your **application** → **Port Forwarding**.
The **Port Forwarding** window appears.



8. Check the **Find free local ports for remote ports** box.
9. Click **Start All**.
10. Click **OK**.

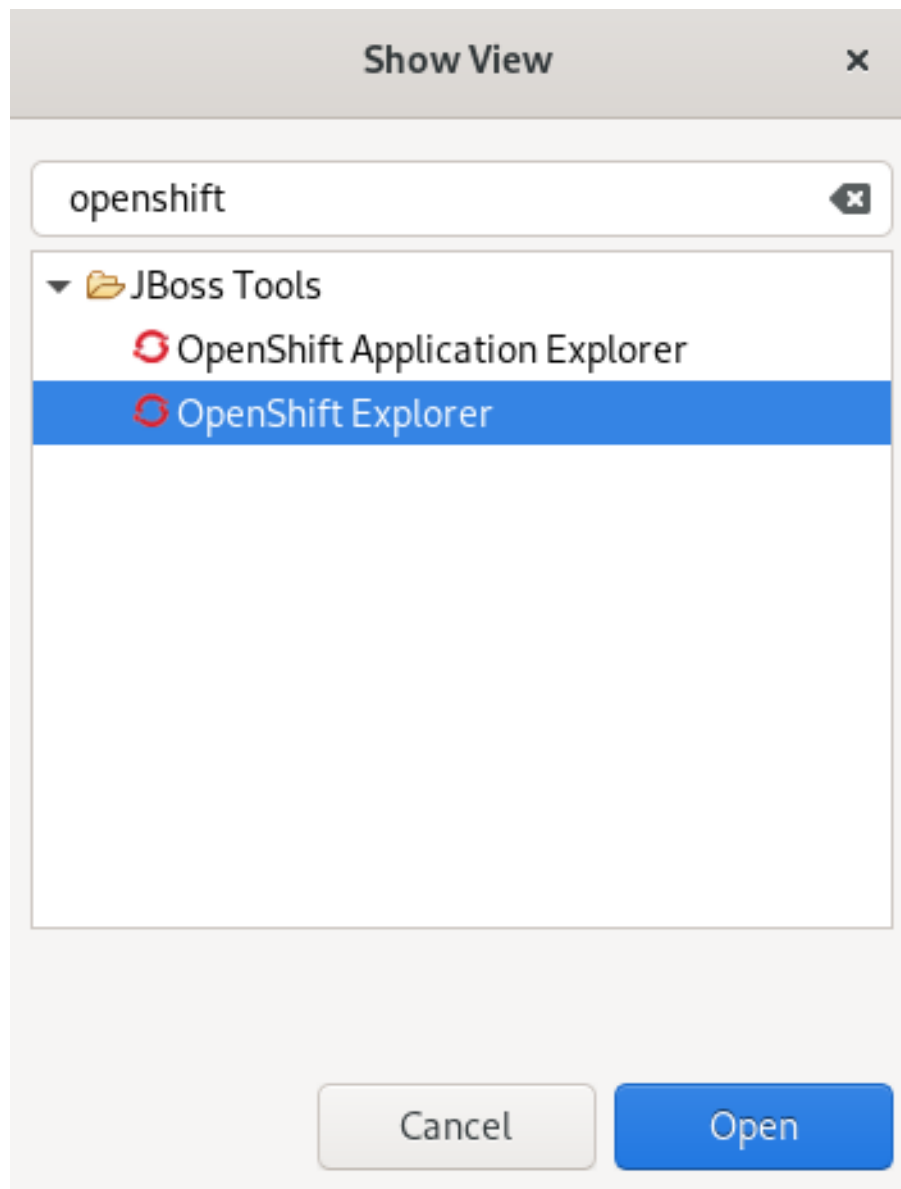
The **Console** view appears showing the port-forwarding starting process.

2.2.3. Streaming Pod Logs

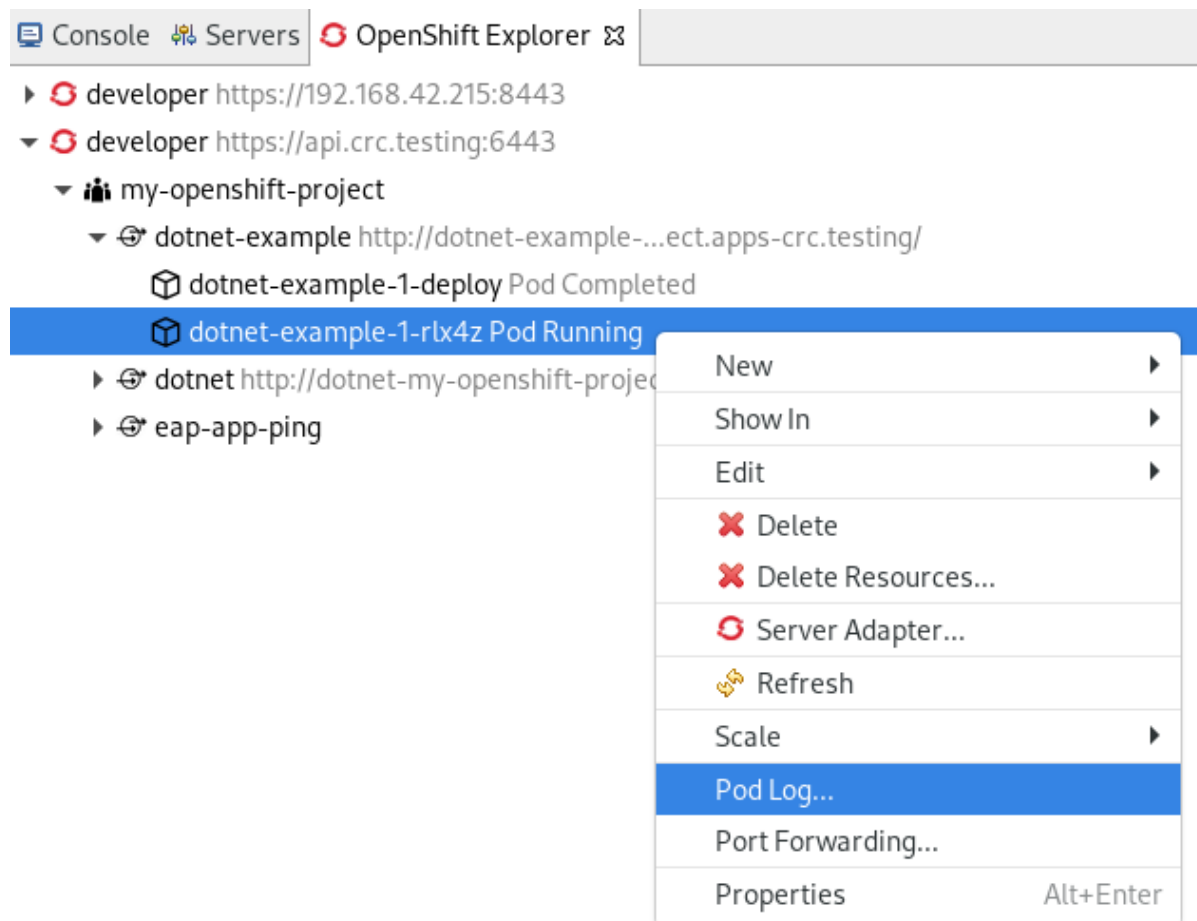
Pod logs are general logs for an application running on a remote OpenShift Container Platform instance. The streaming pod logs feature in CodeReady Studio is used to monitor applications and use the previous pod log to troubleshoot if the application fails or returns errors.

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **OpenShift** in the search field.
4. Select **OpenShift Explorer**.
5. Click **Open**.
The **OpenShift Explorer** view appears.



6. Expand the OpenShift Container Platform connection.
7. Right-click the **application** → **Pod Log**.

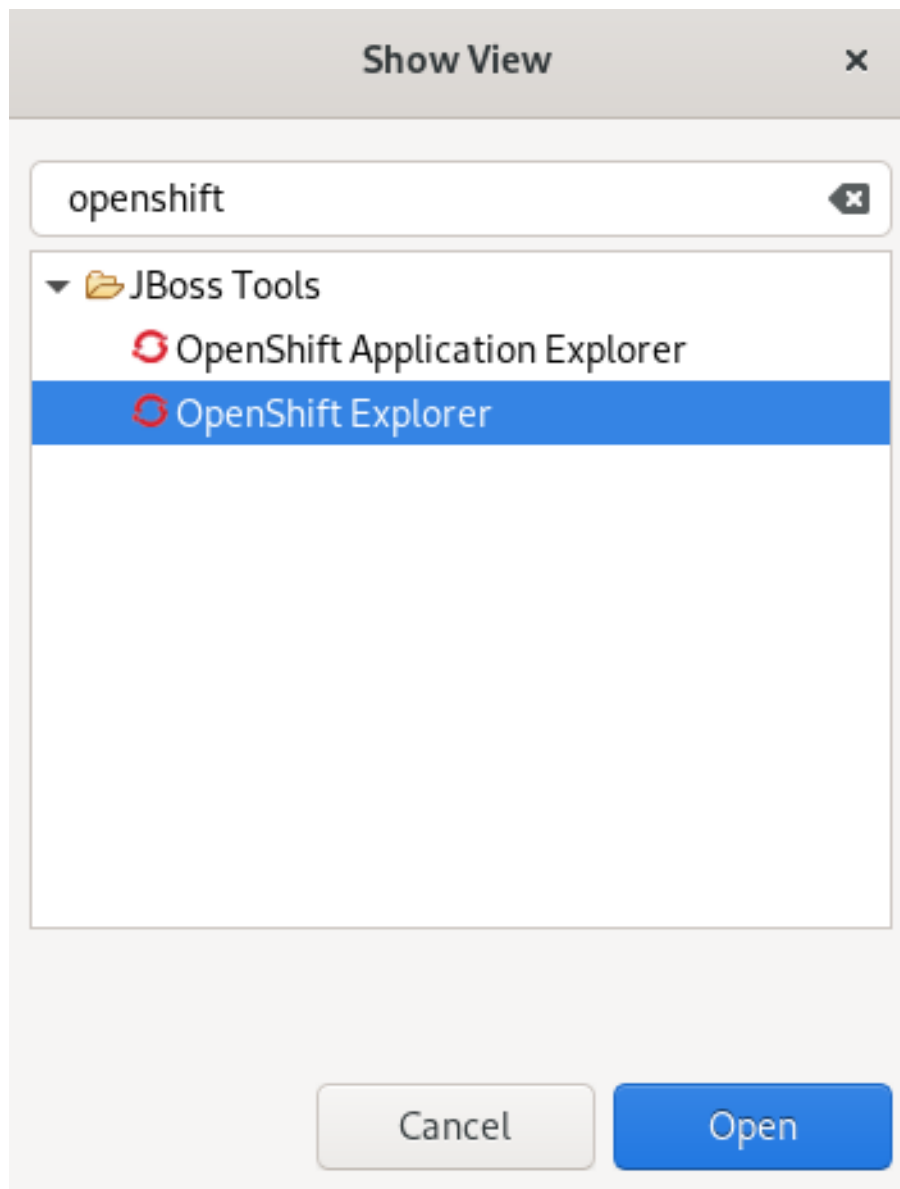
The **Console** view appears displaying the Pod Log.

2.2.4. Streaming Build Logs

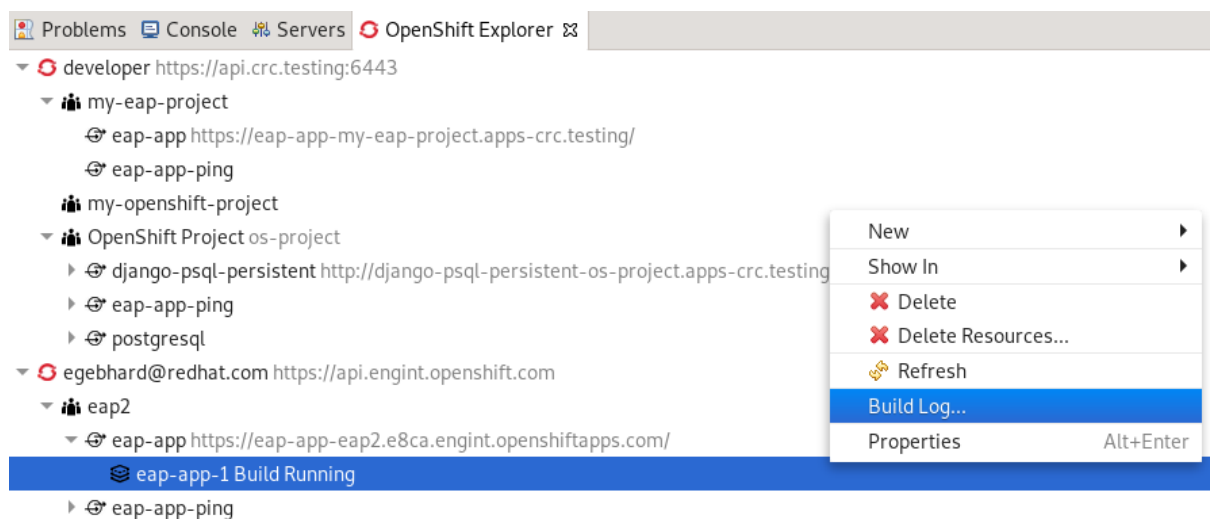
Build logs are logs that document changes to applications running on a remote OpenShift Container Platform instance. The streaming build logs feature in CodeReady Studio is used to view the progress of the application build process and to debug the application.

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **OpenShift** in the search field.
 4. Select **OpenShift Explorer**.
 5. Click **Open**.
- The **OpenShift Explorer** view appears.



6. Expand the OpenShift Container Platform connection.
7. Right-click the **application** → **Build Log**.

The **Console** view appears displaying the Build Log.

2.3. ADDITIONAL RESOURCES

- For more information on OpenShift Application Explorer, see [Getting started with CodeReady Studio Tools](#).

CHAPTER 3. DEVELOPING WITH DOCKER IN CODEREADY STUDIO

3.1. MANAGING DOCKER CONNECTIONS

3.1.1. Setting up a Docker account

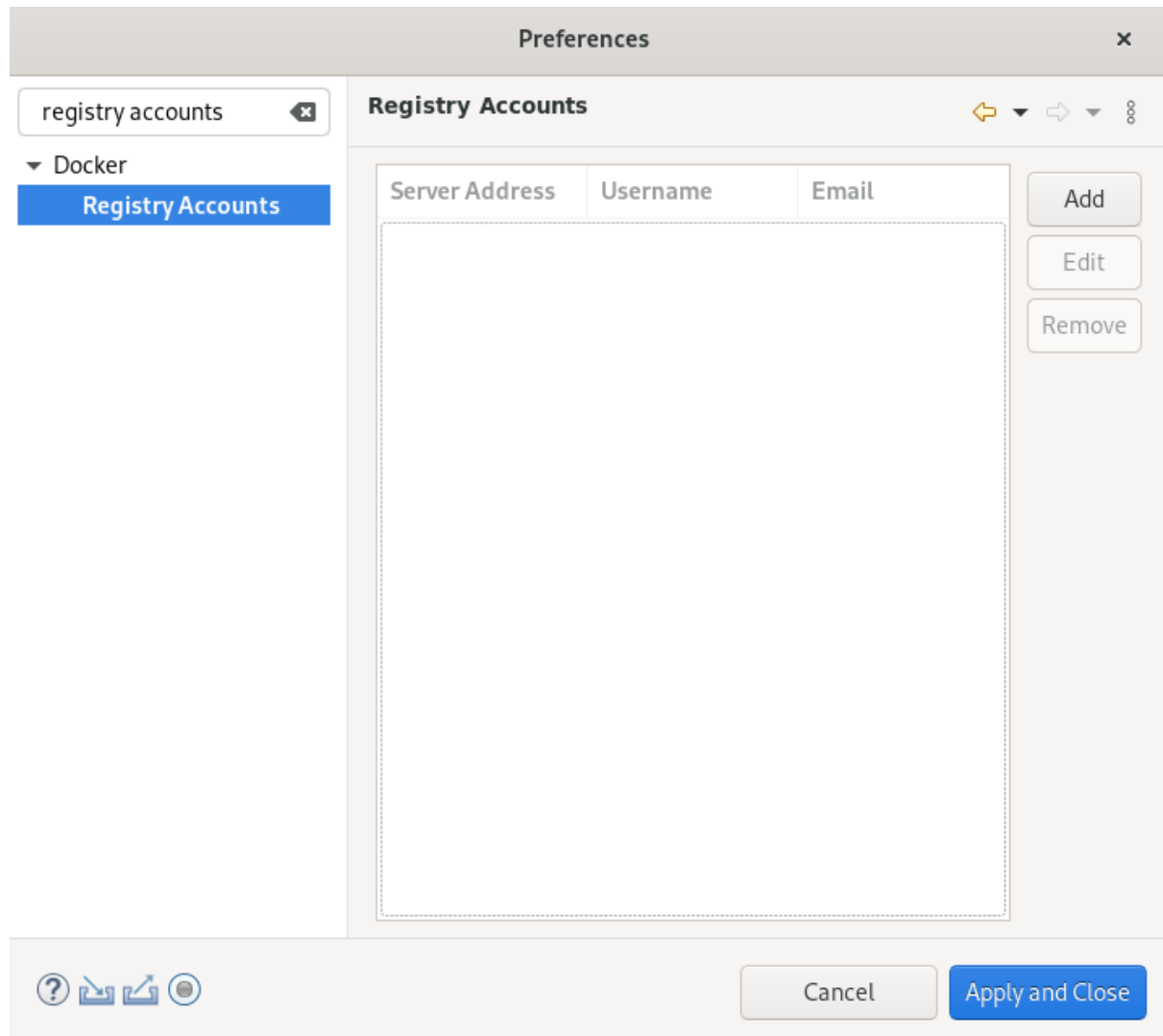
The following section describes how to set up a Docker account in CodeReady Studio.

Prerequisites

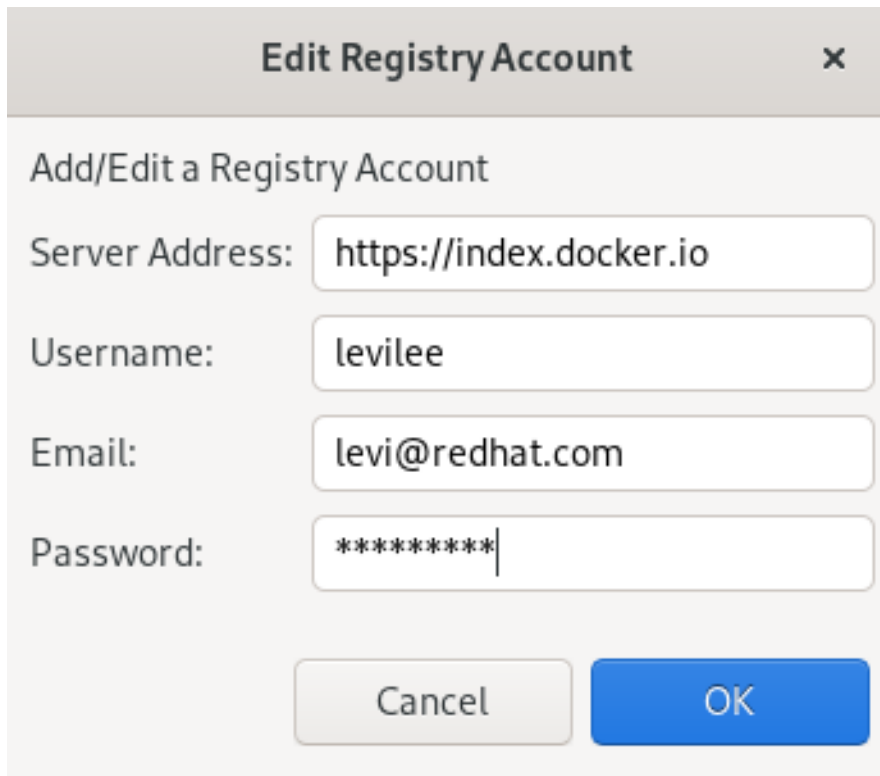
- Docker is installed on your system.
For more information on how to install Docker, see [Docker Docs - Get Docker](#).
- You have a Docker ID.
For more information on how to get a Docker ID, see [Register for a Docker ID](#).

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Preferences**.
The **Preferences** window appears.



3. Enter **Registry Accounts** in the search field.
4. Select **Registry Accounts**.
5. Click **Add**.
The **New Registry Account** window appears.



Edit Registry Account ✕

Add/Edit a Registry Account

Server Address:

Username:

Email:

Password:

6. Enter the **Server Address**.
7. Enter your Docker ID as the **Username**.
8. Enter the email associated with your Docker account.
9. Enter your password.
10. Click **OK**.
11. Click **Apply and Close**.

Your Docker account has been set up.

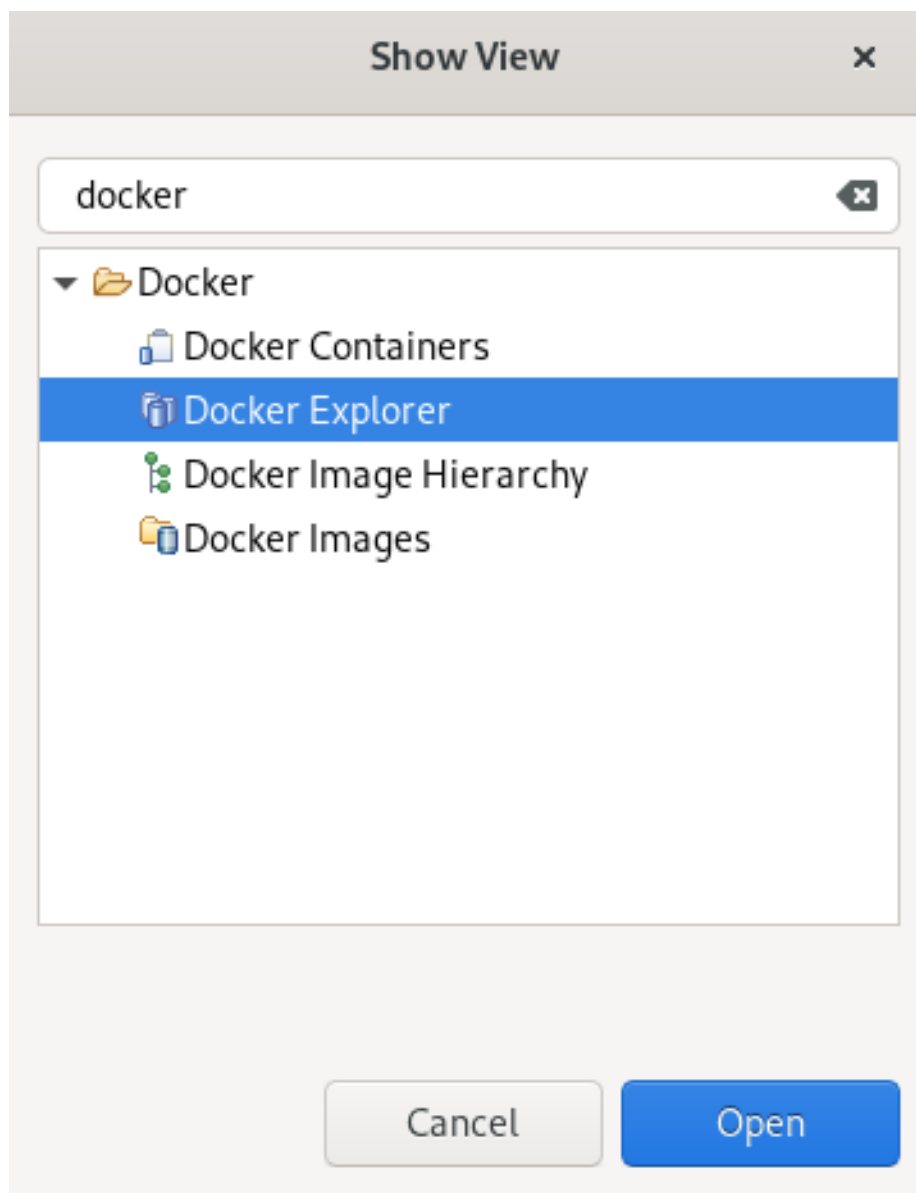
3.1.2. Testing an existing Docker connection

Prerequisites

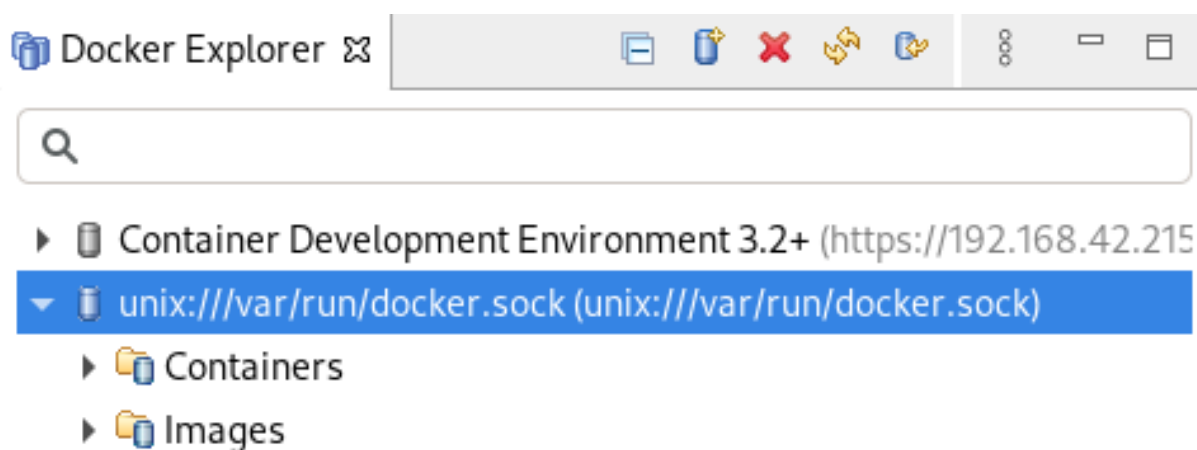
- Your Docker account in CodeReady Studio is set up.
For more information on how to set up a Docker account in CodeReady Studio, see [Setting up a Docker account](#).
- You are logged in to your Docker account.

Procedure

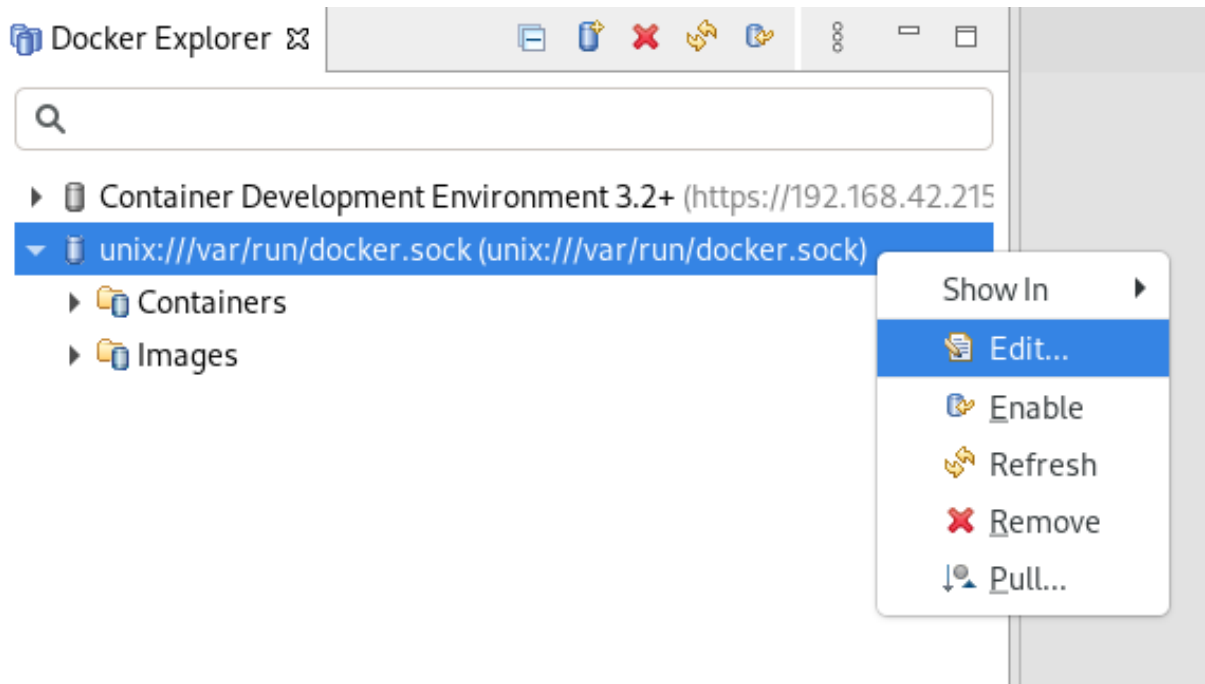
1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



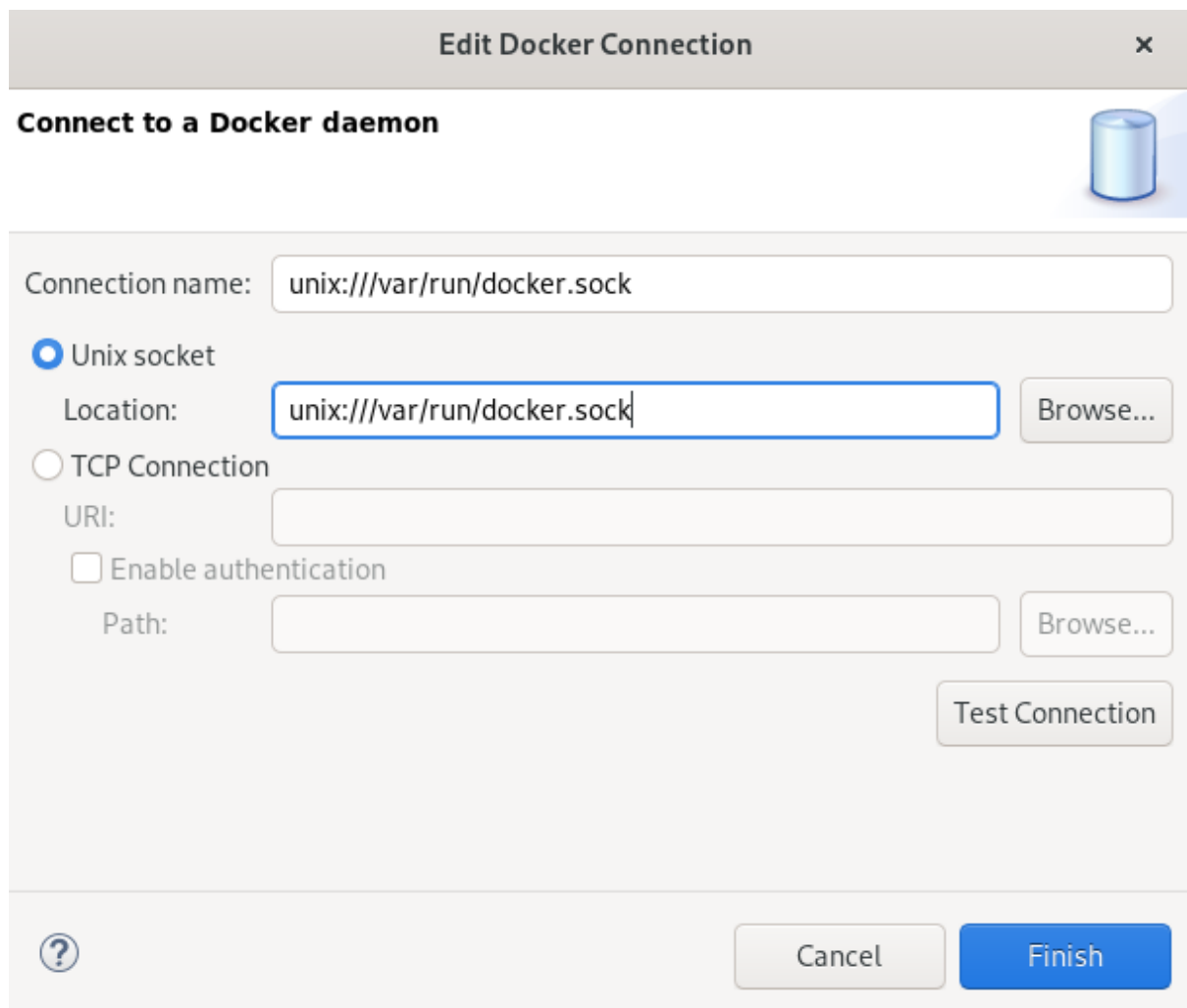
3. Enter **Docker** in the search field.
4. Select **Docker Explorer**.
5. Click **Open**.
The **Docker Explorer** view appears.



6. Right-click **Docker socket** → **Edit**.



The **Edit Docker Connection** window appears.



7. Click **Test Connection**.
If the connection is configured correctly, a window stating **Ping succeeded!** appears.
8. Click **OK**.

9. Click **Finish**.

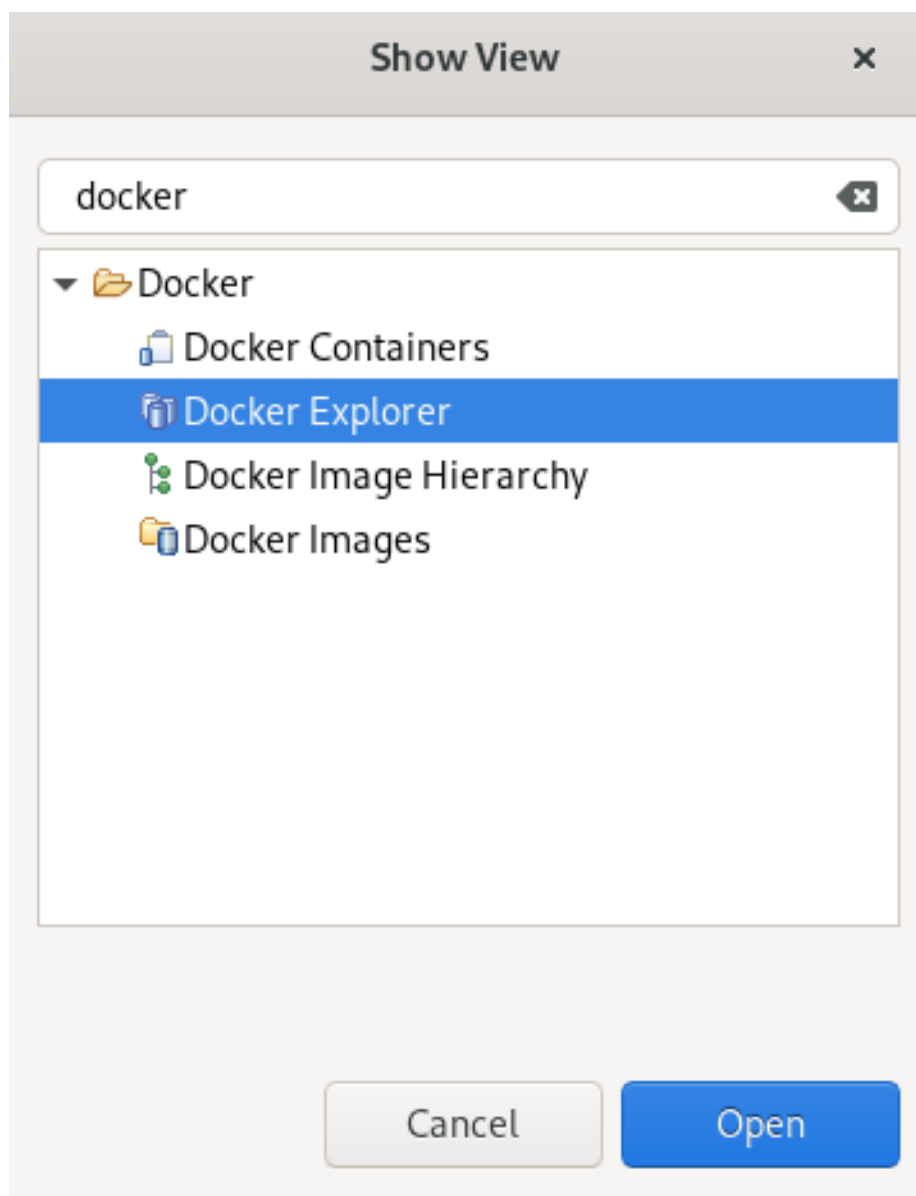
3.1.3. Editing a Docker connection

Prerequisites

- A set up Docker account in CodeReady Studio.
For more information on how to set up a Docker account in CodeReady Studio, see [Setting up a Docker account](#).
- You are logged in to your Docker account.

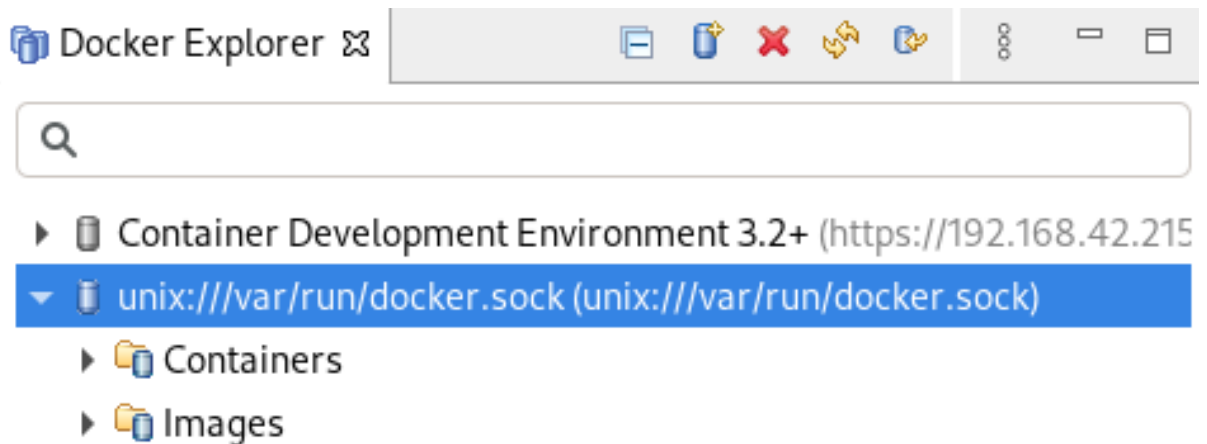
Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.

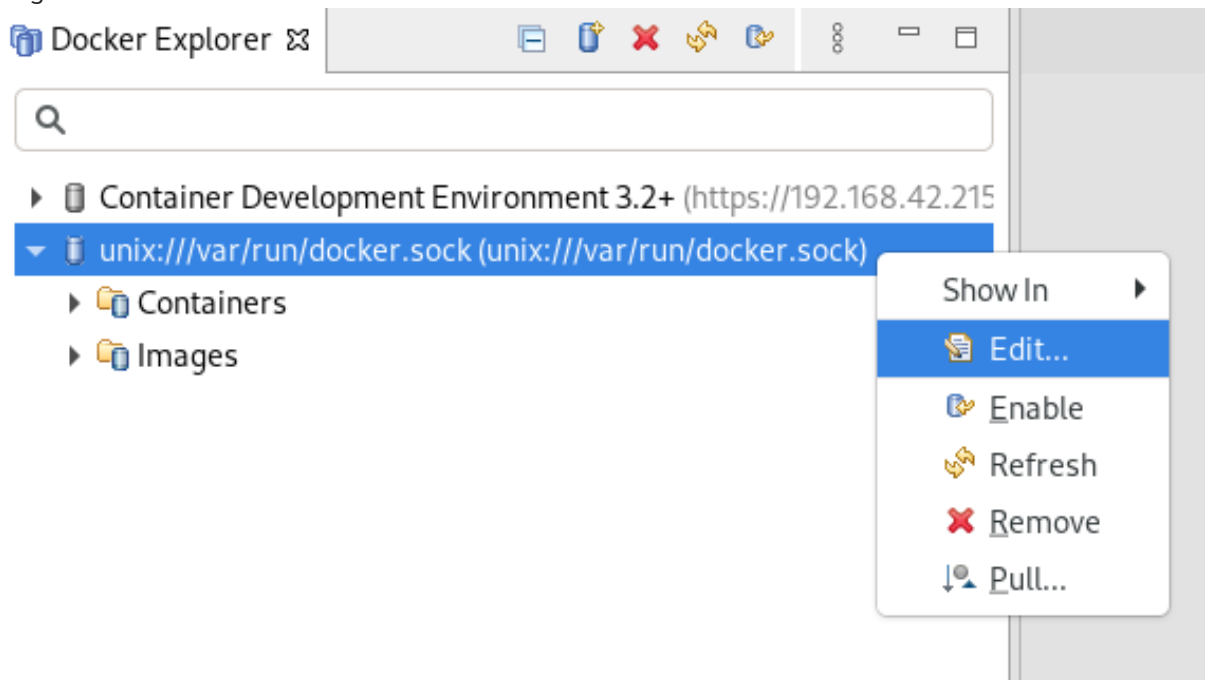


3. Enter **Docker** in the search field.

4. Select **Docker Explorer**.
5. Click **Open**.
The **Docker Explorer** view appears.



6. Right-click **Docker socket** → **Edit**.



The **Edit Docker Connection** window appears.

7. Click **Browse** in the **Unix socket Location** field to locate a new socket or check the **TCP Connection** option and add your host URI.
8. Click **Finish**.

Your docker connection has been edited.

3.2. MANAGING DOCKER IMAGES

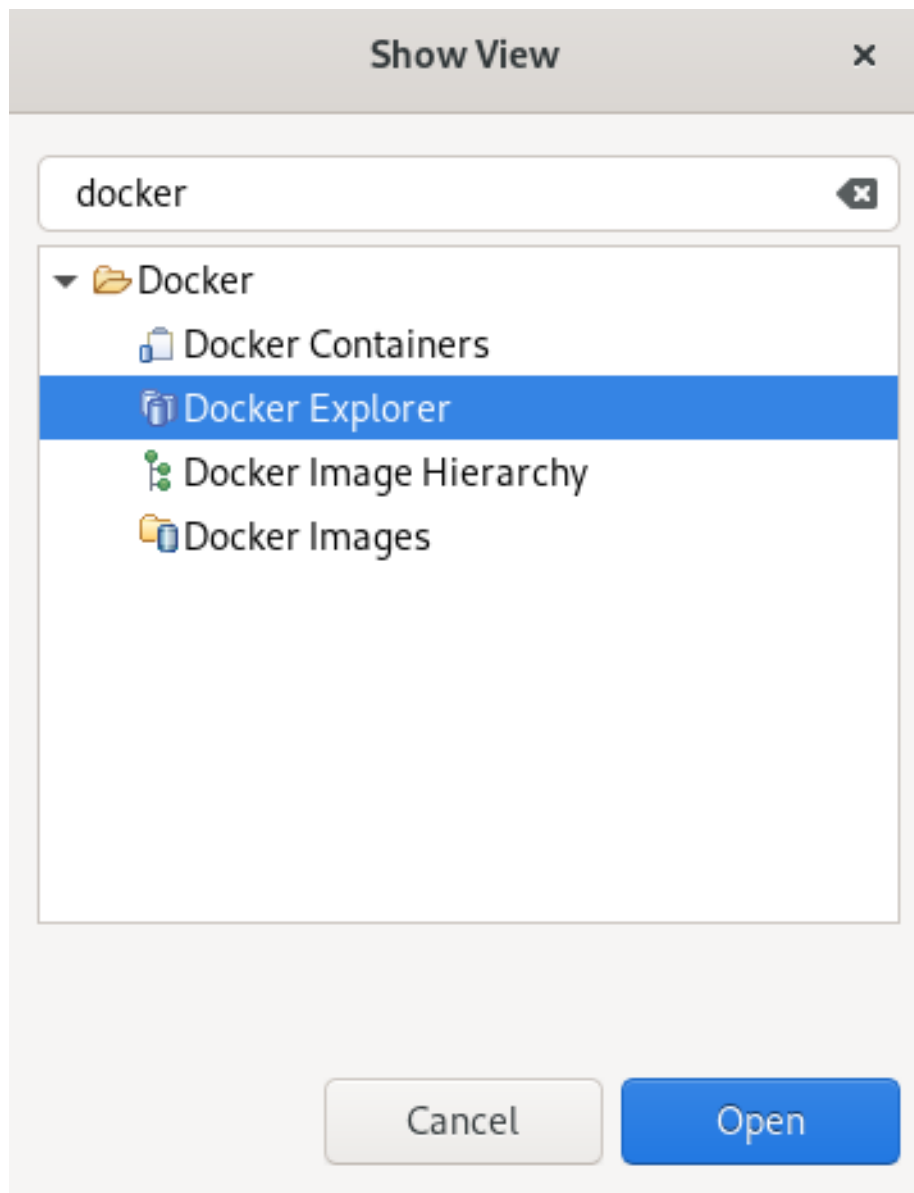
Prerequisites

- A set up Docker account in CodeReady Studio.
For more information on how to set up a Docker account in CodeReady Studio, see [Setting up a Docker account](#).
- You are logged in to your Docker account.

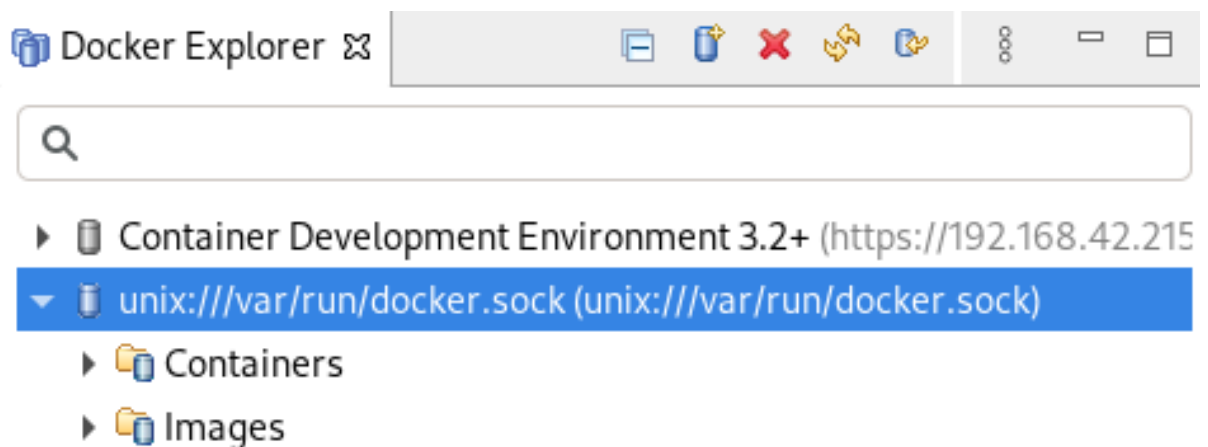
3.2.1. Pulling Docker images

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.

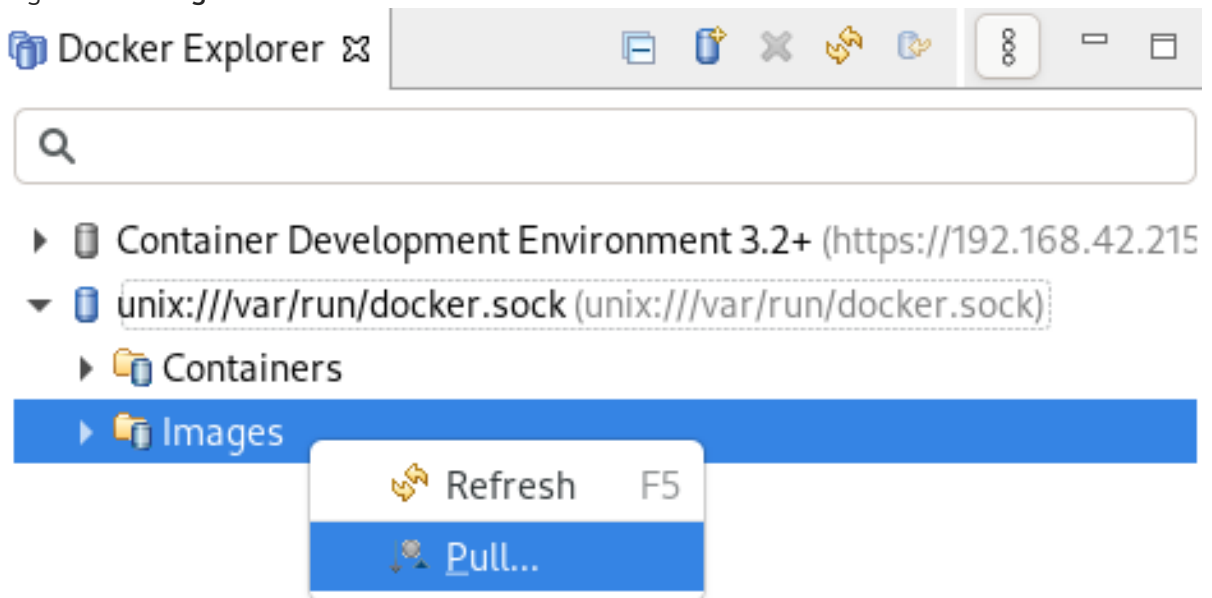


3. Enter **Docker** in the search field.
4. Select **Docker Explorer**.
5. Click **Open**.
The **Docker Explorer** view appears.

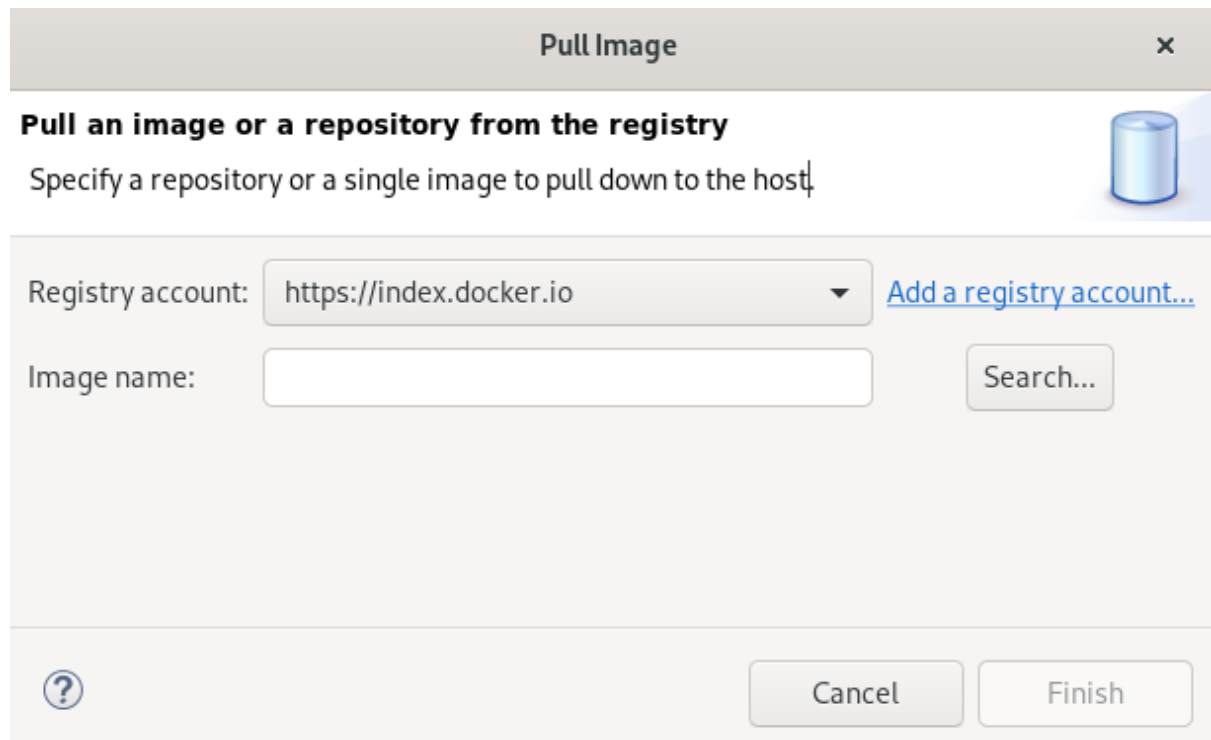


6. Expand the **Docker socket** folder.

7. Right-click **Images** → **Pull**.

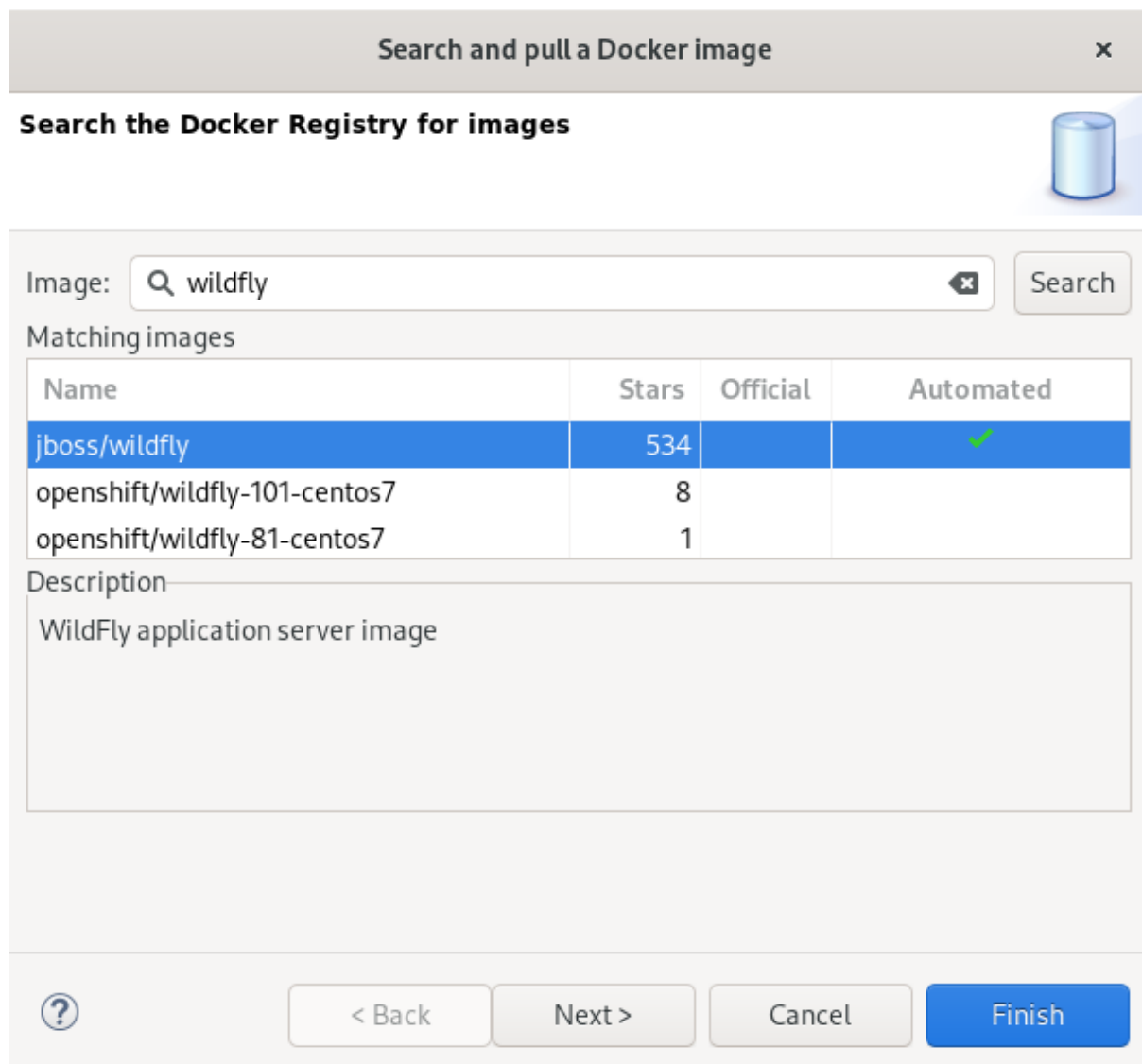


The **Pull Image** window appears.

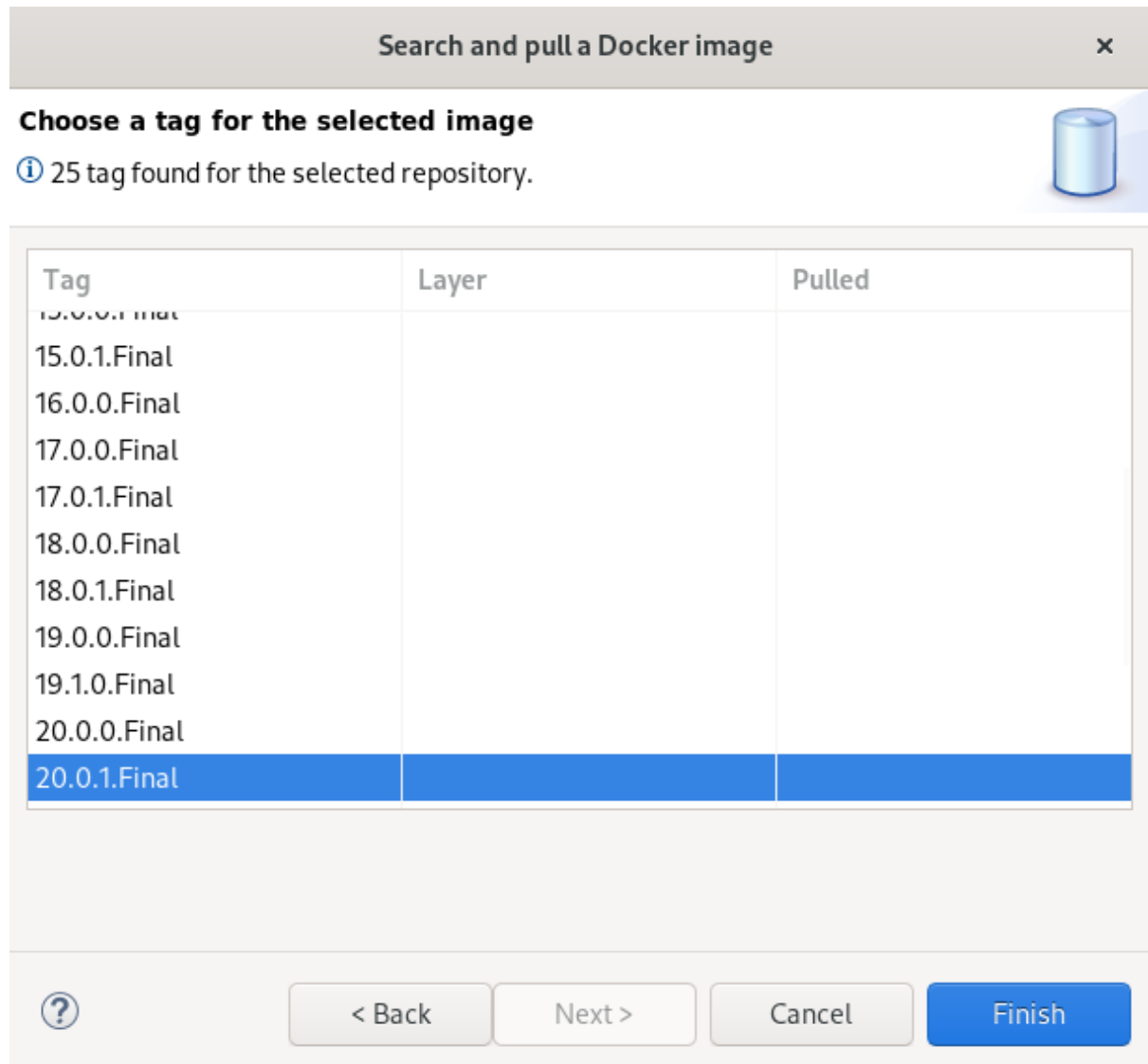


8. Click **Search**.

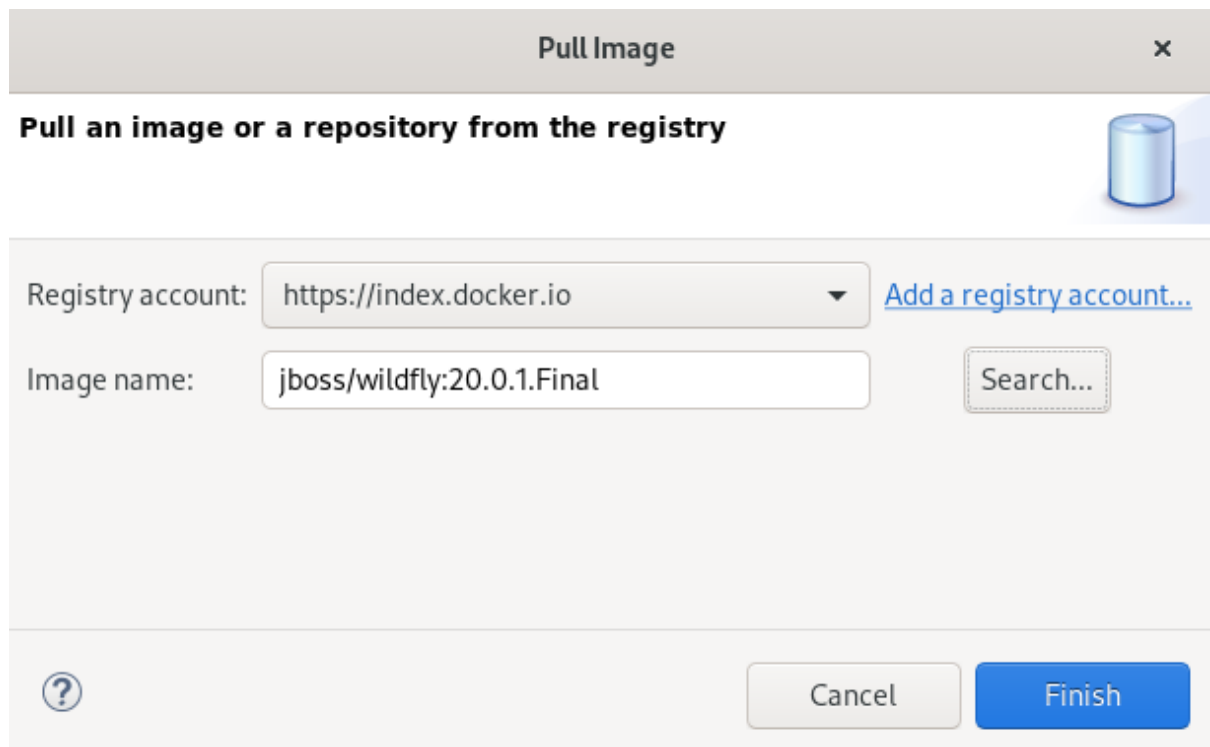
The **Search the Docker Registry for images** window appears.



9. Enter your image name into the search field.
10. Click **Next**.
The **Choose a tag for the selected image** window appears.

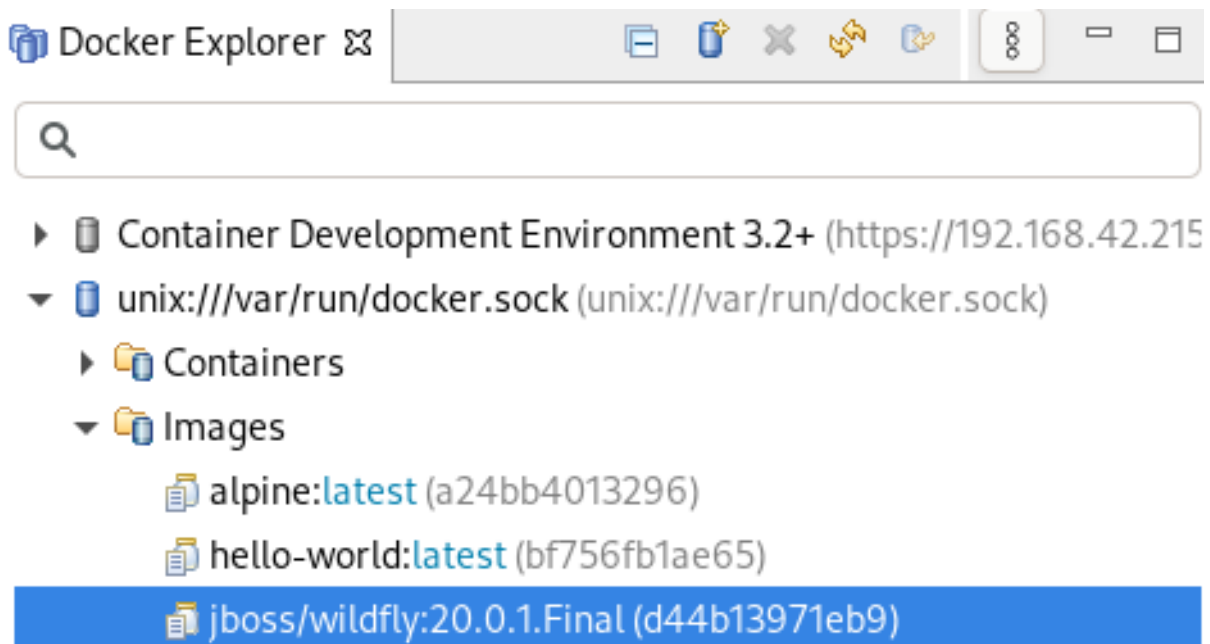


11. Choose a tag for your image.
12. Click **Finish**.
The **Pull an image or a repository from the registry** window appears.



13. Click **Finish**.

Your new Docker image is now listed in the **Docker Explorer** view.



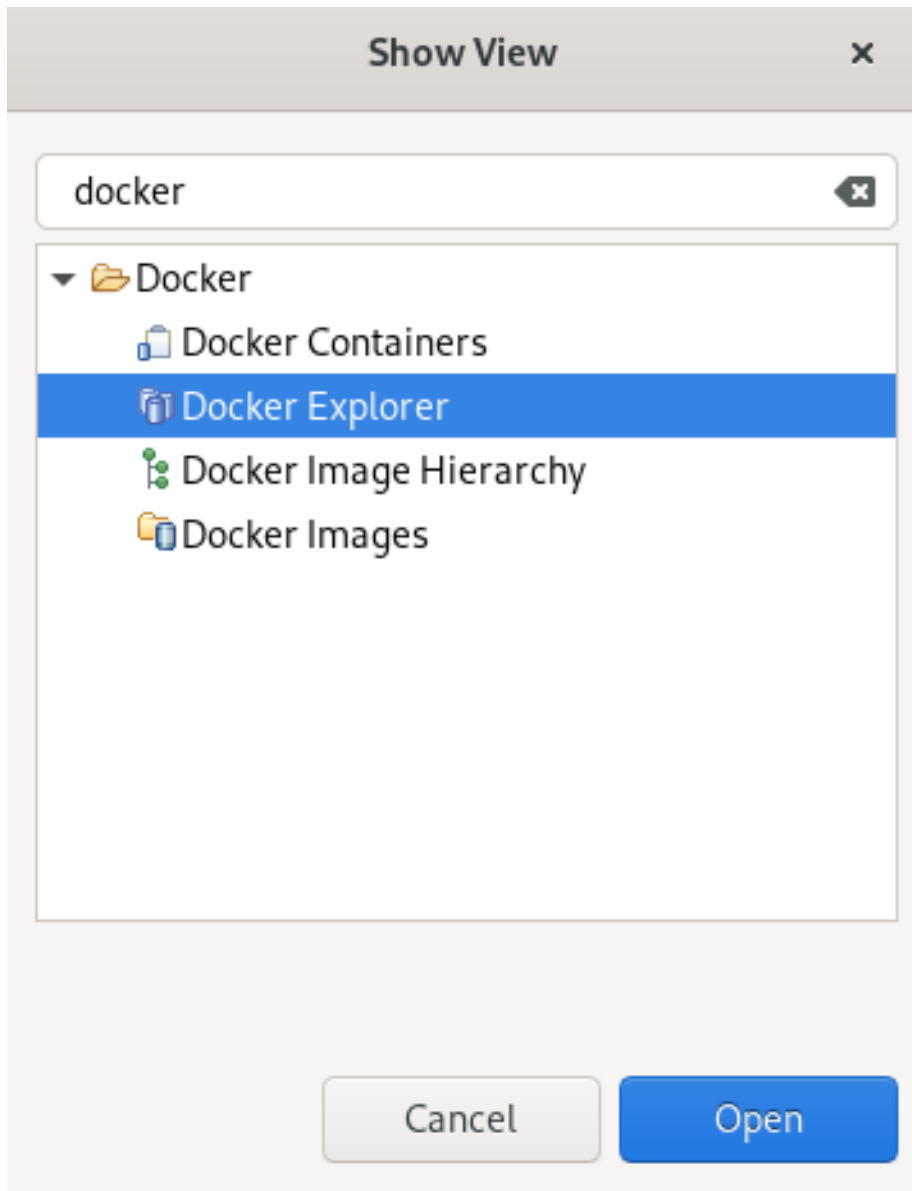
3.2.2. Pushing Docker images

Before pushing an image you must tag it. The following section describes how to tag and push a Docker image in CodeReady Studio.

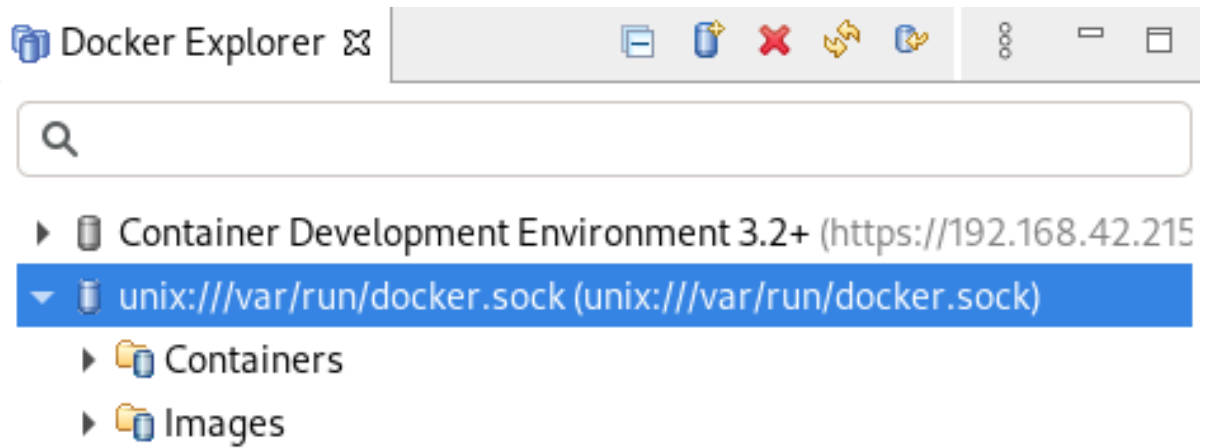
Procedure

1. Start CodeReady Studio.

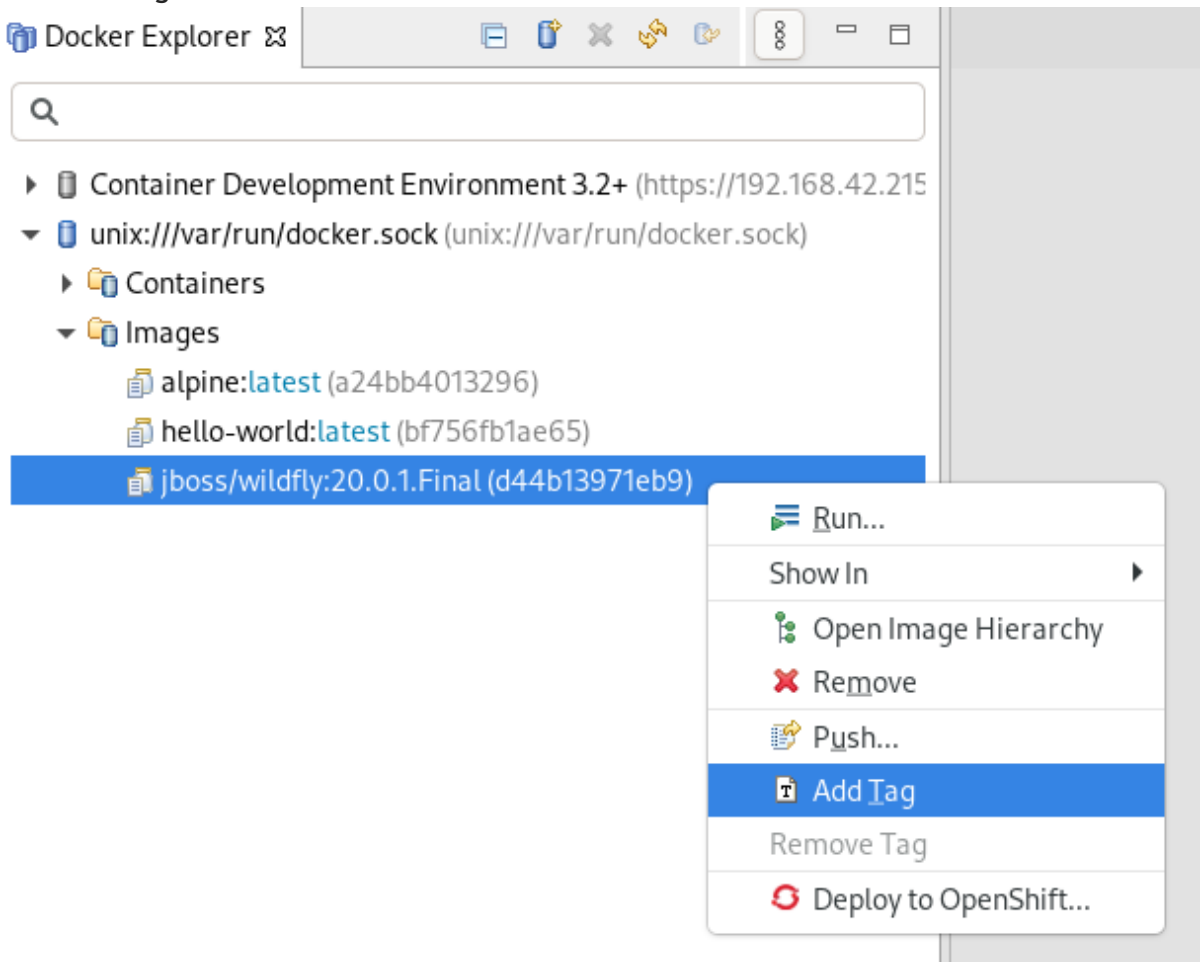
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



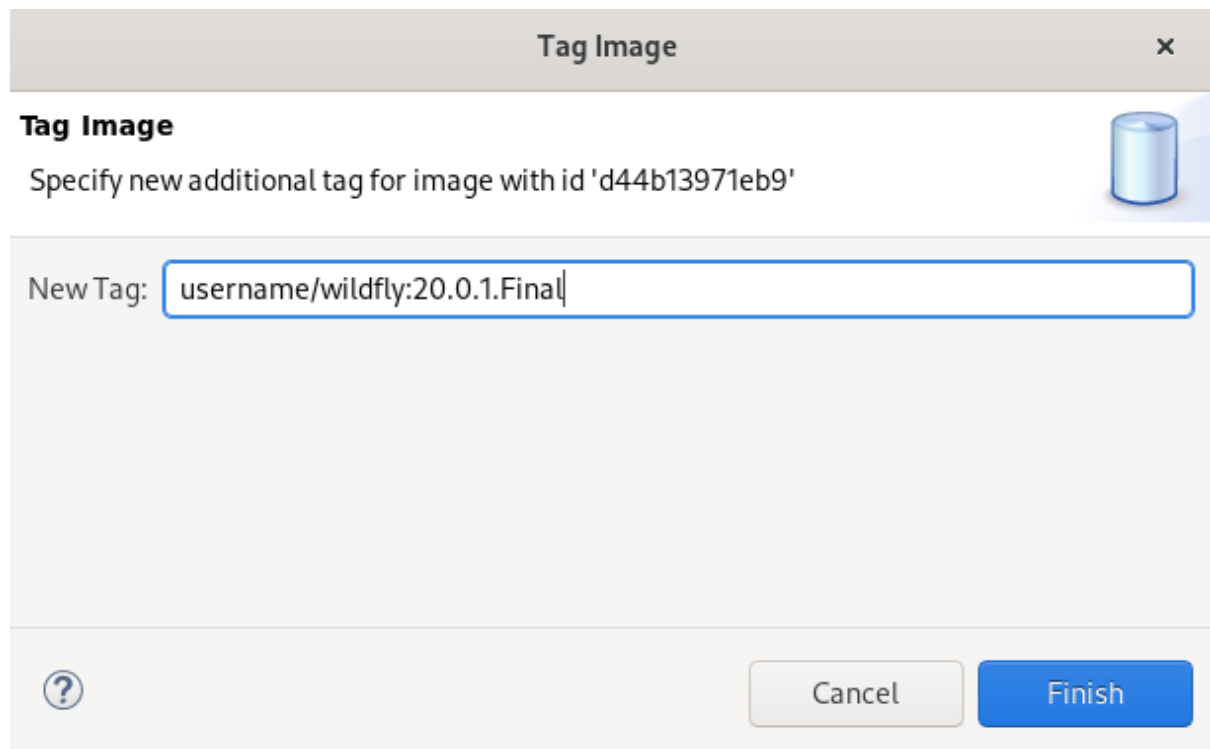
3. Enter **Docker** in the search field.
4. Select **Docker Explorer**.
5. Click **Open**.
The **Docker Explorer** view appears.



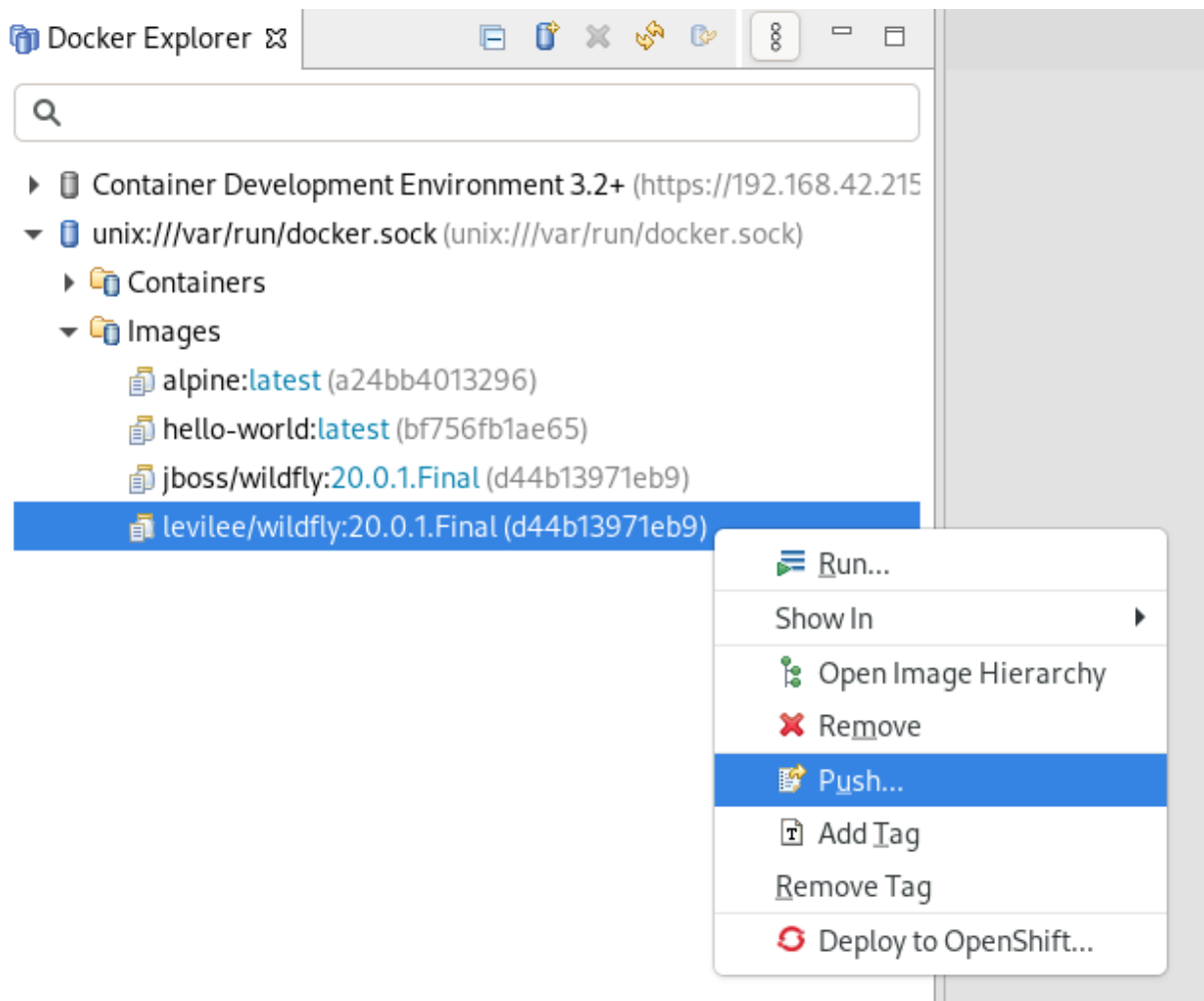
6. Expand **Docker socket** → **Images**.
7. Right-click the image you want to tag.
8. Click **Add tag**.



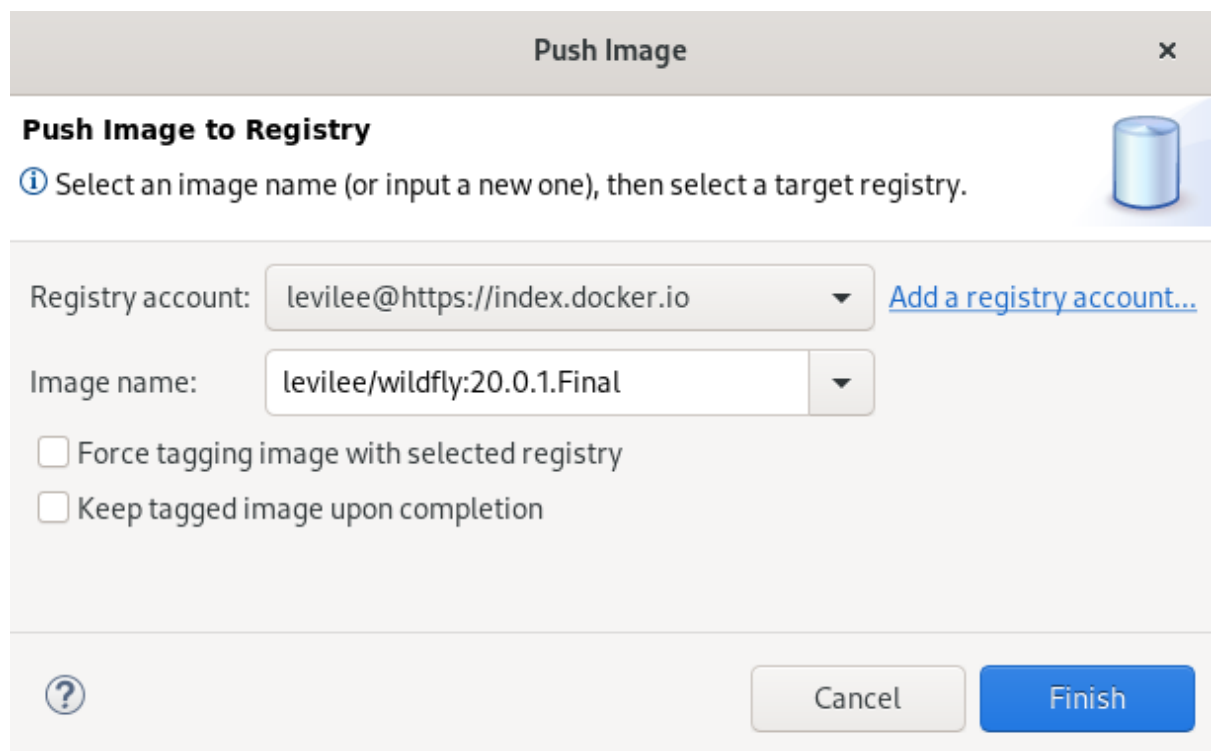
The **Tag Image** window appears.



9. Enter your tag in the **New Tag** field.
The tag should be in the form of **username/image_name:tag_name**, where **username** is your Docker ID on <https://hub.docker.com>, **image_name** is the name of your image, and **tag_name** is the version of your image.
10. Click **Finish**.
11. Right-click the **tagged image** → **Push**.



The **Push image to Registry** window appears.



12. Select the **Registry Account** that starts with your Docker ID.

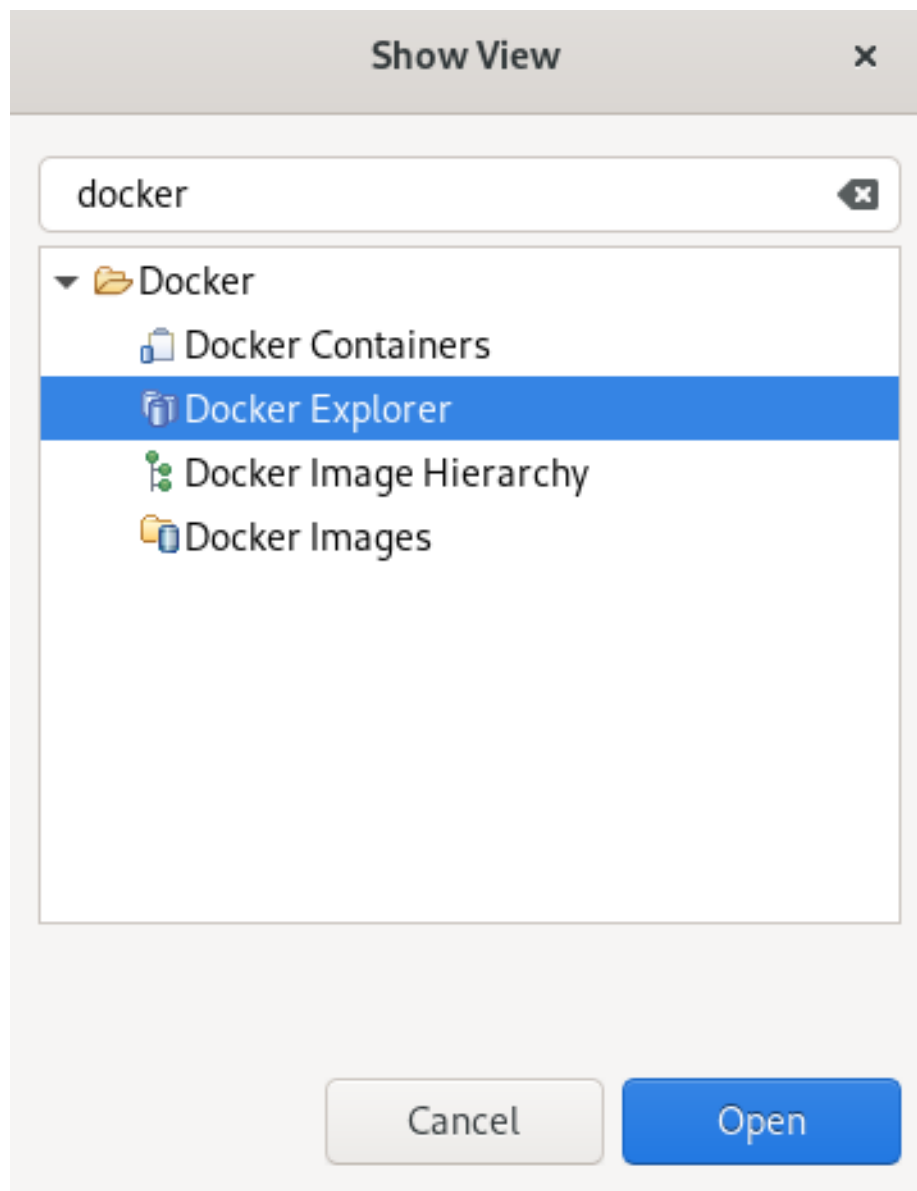
13. Click **Finish**.

After you push the image it appears in the Docker Cloud. This image is then available for other developers to use.

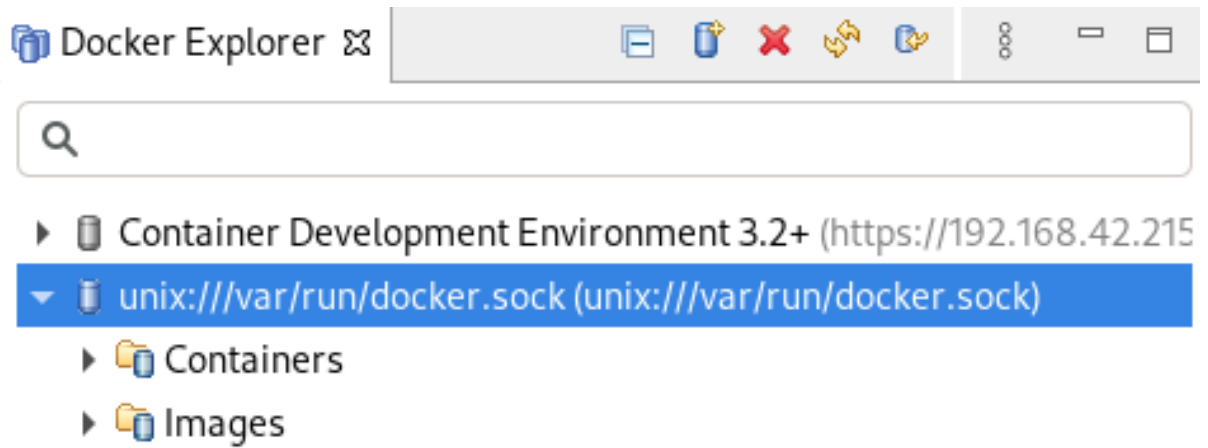
3.2.3. Running Docker images

Procedure

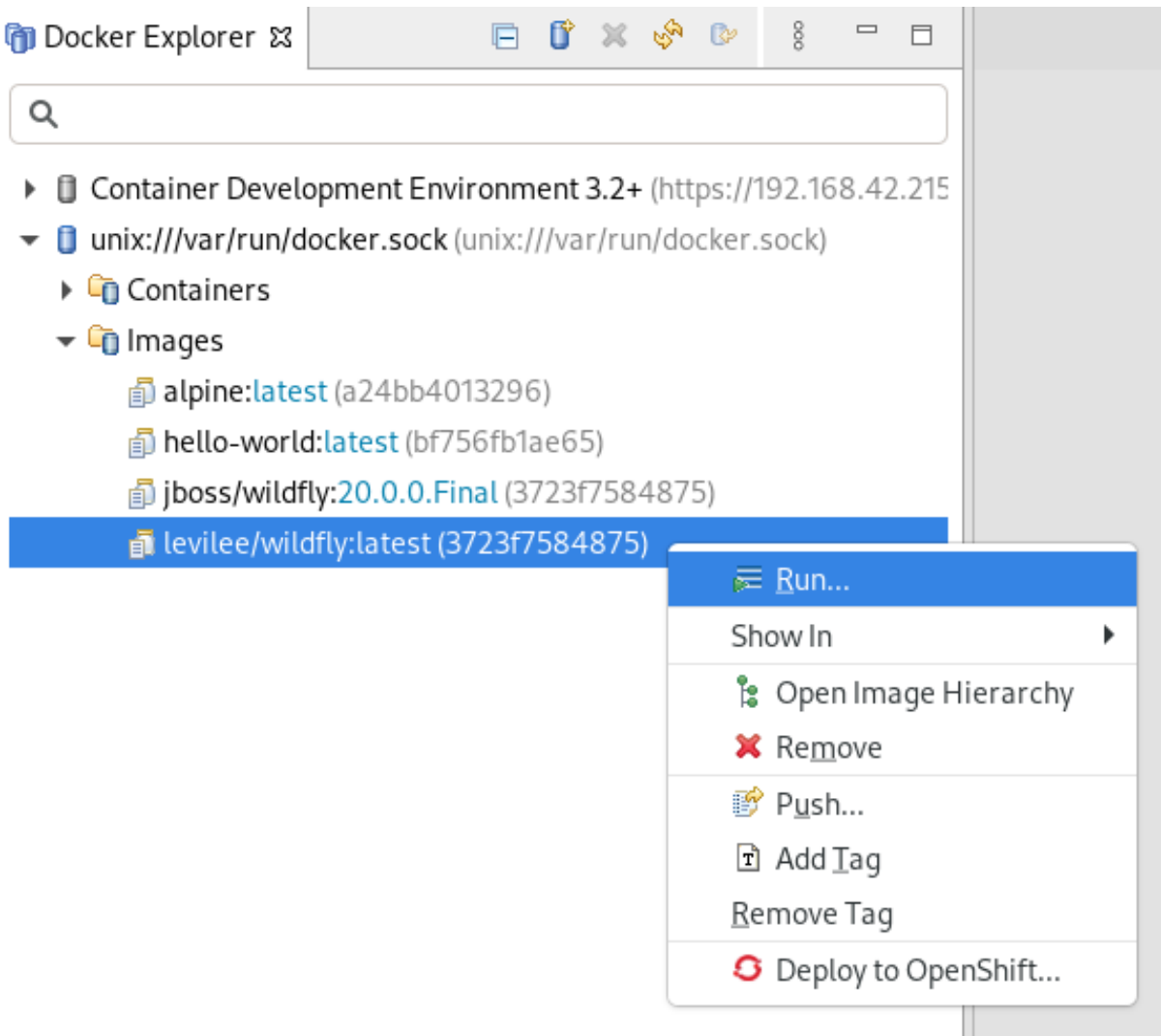
1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **Docker** in the search field.
4. Select **Docker Explorer**.
5. Click **Open**.
The **Docker Explorer** view appears.



6. Expand **Docker socket** → **Images**.
7. Right-click an image you want to run.
8. Click **Run**.



The **Docker Container settings** window appears.

x
Run a Docker Image

Docker Container settings

Image: ▼ Search...

[Pull this image...](#)

Container Name:

Entrypoint:

Command:

Publish all exposed ports to random ports on the host interfaces

Only publish the selected container ports below to the host:

Container Port	Type	Host Address	Host Port
<input checked="" type="checkbox"/> 8080	tcp		8080

Add...
Edit...
Remove

Links to other containers:

Container Name	Alias

Add...
Edit...
Remove

Keep STDIN open to Console even if not attached (-i)


Allocate pseudo-TTY from Console (-t)

Automatically remove the container when it exits (--rm)

Give extended privileges to this container (--privileged)

Use unconfined seccomp profile (--securityOpt seccomp=unconfined)

Add basic security (--readonly --tmpfs /run --tmpfs /tmp --cap-drop=all)



< Back
Next >
Cancel
Finish

9. Name the container.

10. Clear the **Publish all exposed ports to random ports on the host interfaces** check box.

11. Check the box for the **8080** port.
12. Click **Finish**.
The **Console** view appears showing the process of starting the image.
13. In the web browser, navigate to <http://localhost:8080/> to see the image running.



3.2.4. Building images with Dockerfile

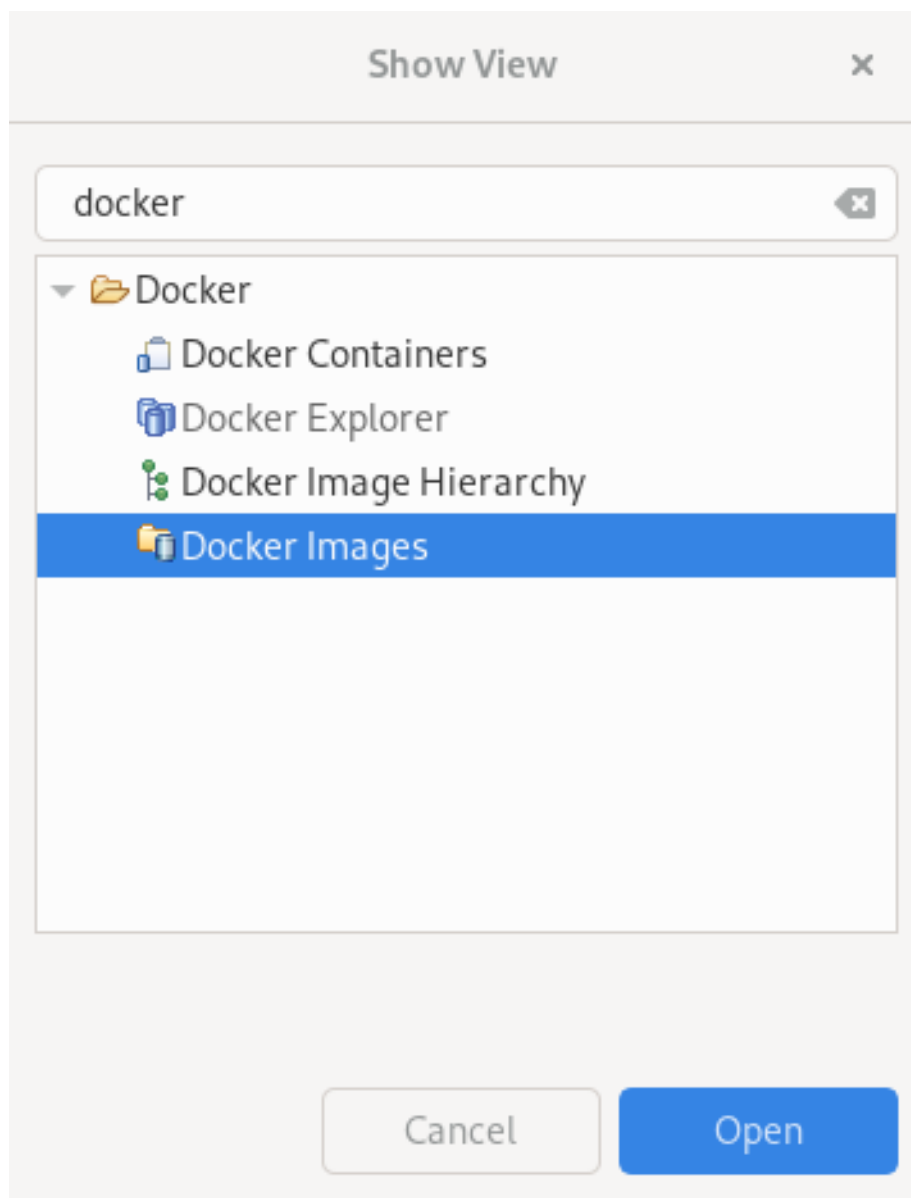
You can build or create an image by modifying an existing image. Typically, this involves installing new packages. The specification of the new Docker image is done via **Dockerfile**.

Prerequisites

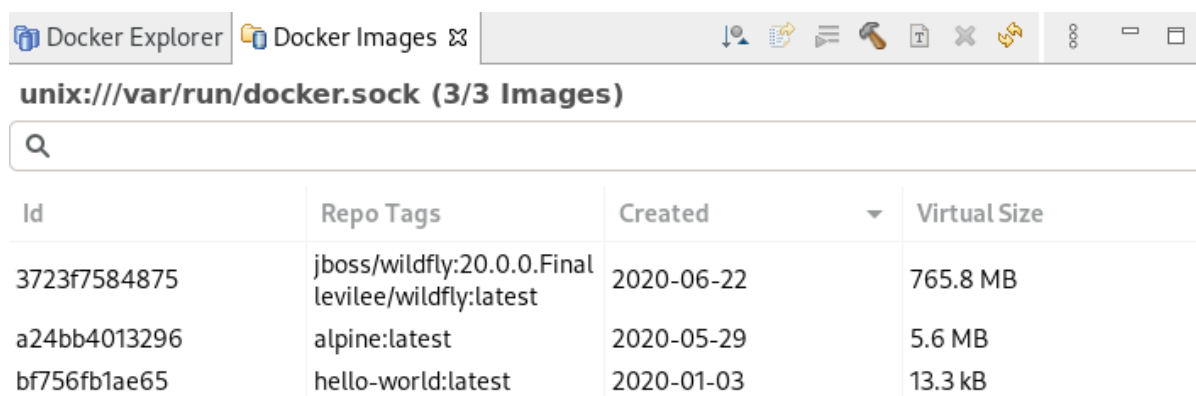
- You must have a Dockerfile created on your local machine.

Procedure

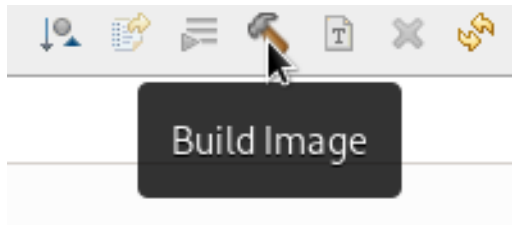
1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



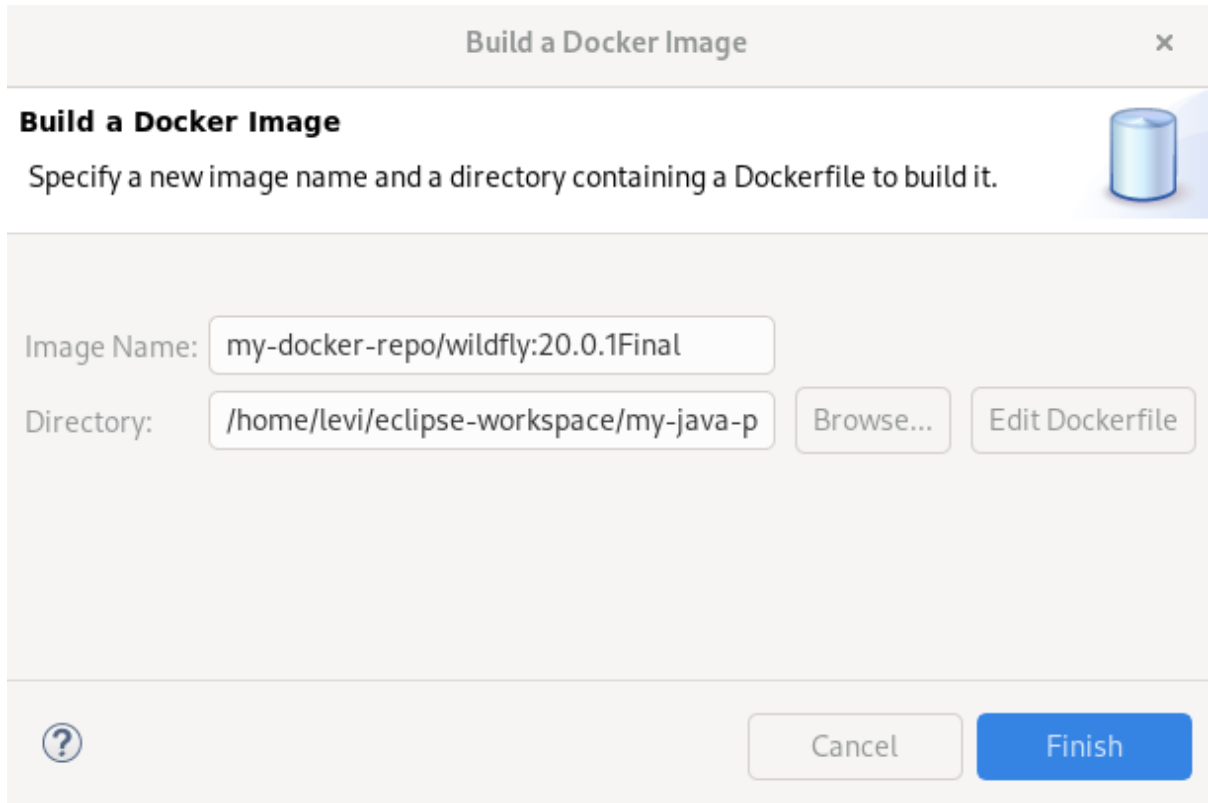
3. Enter **Docker** in the search field.
4. Select **Docker Images**.
5. Click **Open**.
The **Docker Images** view appears.



6. Click the **Build Image** icon.



The **Build a Docker Image** window appears.



7. Name the image in the format of **repo/name:version**.
8. Click **Browse** to locate the Dockerfile.
9. Click **Finish**.

The **Console** view appears displaying the build process.

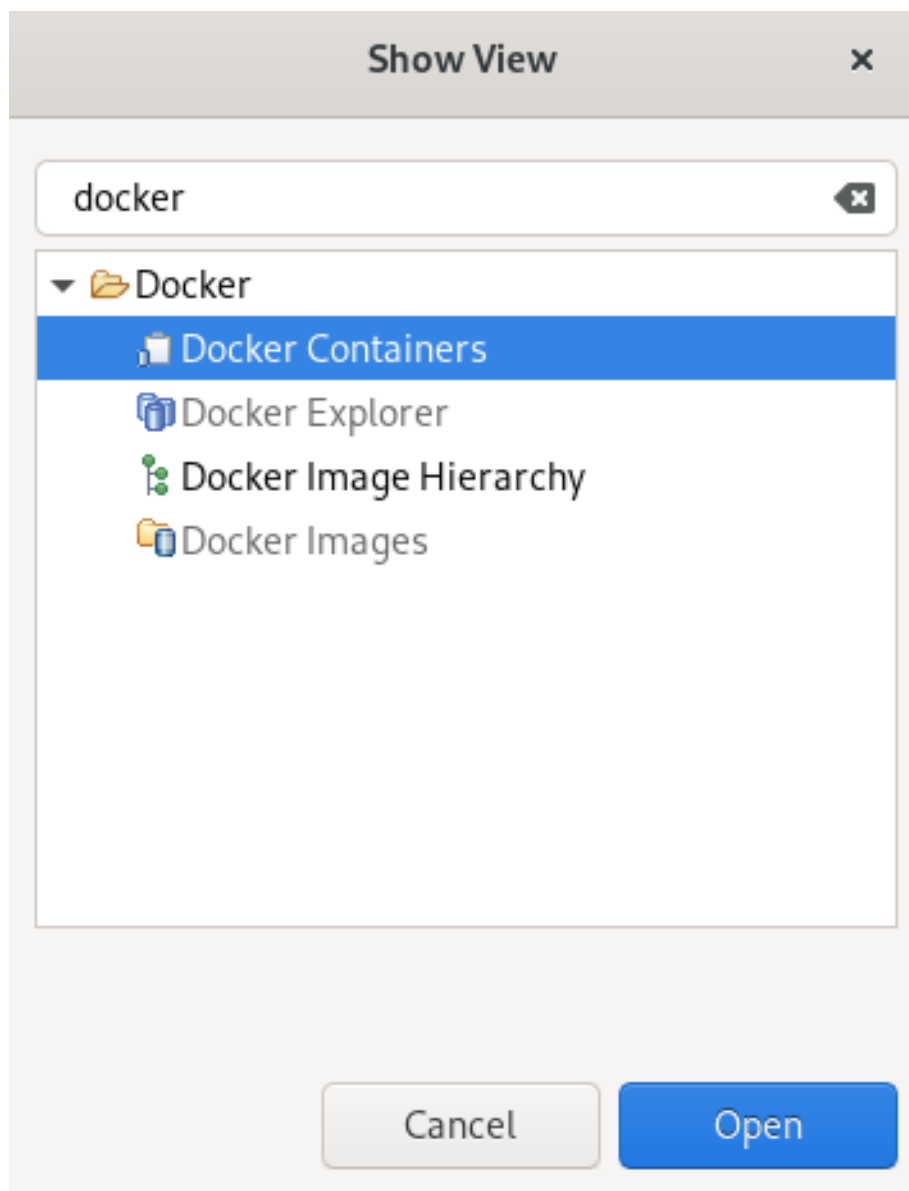
3.3. MANAGING DOCKER CONTAINERS

Docker containers are isolated processes that are based on Docker images. Once created, users can stop, start, pause, unpause, kill, or remove the containers as well as read their logs.

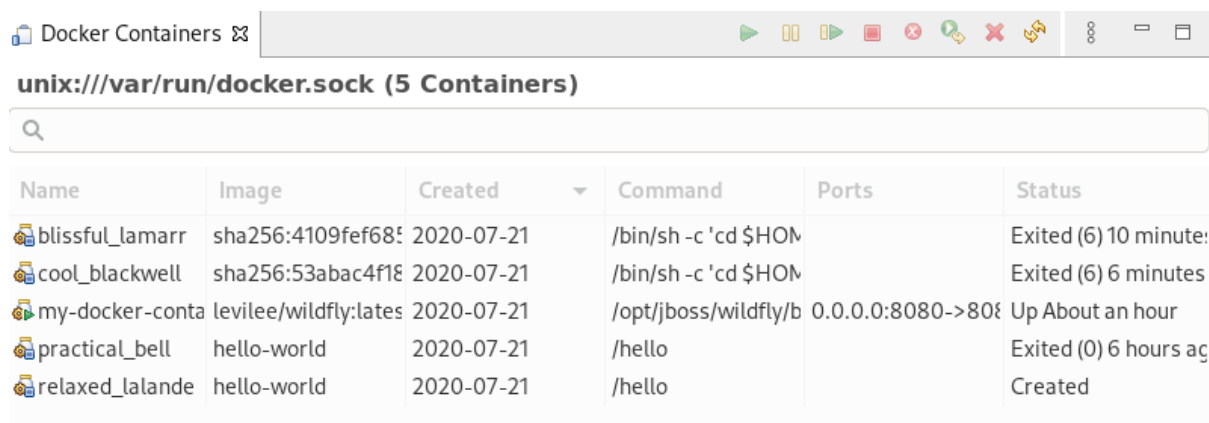
The following section describes how to manage Docker containers in CodeReady Studio.

Procedure

1. Start CodeReady Studio.
2. Click **Window** → **Show View** → **Other**.
The **Show View** window appears.



3. Enter **Docker** into the search field.
 4. Select **Docker Containers**.
 5. Click **Open**.
- The **Docker Containers** view appears.



You can start, pause, unpause, stop, kill, restart, remove, or refresh the containers by using the panel.

