OpenShift Container Platform 4.11

Web console

Getting started with the web console in OpenShift Container Platform

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Legal Notice

Abstract

This document provides instructions for accessing and customizing the OpenShift Container Platform web console.

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CHAPTER 1. WEB CONSOLE OVERVIEW

The Red Hat OpenShift Container Platform web console provides a graphical user interface to visualize your project data and perform administrative, management, and troubleshooting tasks. The web console runs as pods on the control plane nodes in the openshift-console project. It is managed by a **console-operator** pod. Both **Administrator** and **Developer** perspectives are supported.

Both **Administrator** and **Developer** perspectives enable you to create quick start tutorials for OpenShift Container Platform. A quick start is a guided tutorial with user tasks and is useful for getting oriented with an application, Operator, or other product offering.

1.1. ABOUT THE ADMINISTRATOR PERSPECTIVE IN THE WEB CONSOLE

The **Administrator** perspective enables you to view the cluster inventory, capacity, general and specific utilization information, and the stream of important events, all of which help you to simplify planning and troubleshooting tasks. Both project administrators and cluster administrators can view the **Administrator** perspective.

Cluster administrators can also open an embedded command line terminal instance with the web terminal Operator in OpenShift Container Platform 4.7 and later.

NOTE

The default web console perspective that is shown depends on the role of the user. The **Administrator** perspective is displayed by default if the user is recognized as an administrator.

The **Administrator** perspective provides workflows specific to administrator use cases, such as the ability to:

- Manage workload, storage, networking, and cluster settings.
- Install and manage Operators using the Operator Hub.
- Add identity providers that allow users to log in and manage user access through roles and role bindings.
- View and manage a variety of advanced settings such as cluster updates, partial cluster updates, cluster Operators, custom resource definitions (CRDs), role bindings, and resource quotas.
- Access and manage monitoring features such as metrics, alerts, and monitoring dashboards.
- View and manage logging, metrics, and high-status information about the cluster.
- Visually interact with applications, components, and services associated with the **Administrator** perspective in OpenShift Container Platform.

Additional resources

See About the web terminal in the web console for more information on the web terminal Operator.

1.1.1. Accessing the Administrator perspective

The **Administrator** perspective in the OpenShift Container Platform web console provides workflows specific to administrator use cases. You can access the **Administrator** perspective from the web console as follows:

Procedure

- Log in to the OpenShift Container Platform web console using your login credentials to access the **Administrator** perspective.

1.2. ABOUT THE DEVELOPER PERSPECTIVE IN THE WEB CONSOLE

The **Developer** perspective offers several built-in ways to deploy applications, services, and databases. In the **Developer** perspective, you can:

- View real-time visualization of rolling and recreating rollouts on the component.

- View the application status, resource utilization, project event streaming, and quota consumption.

- Share your project with others.

- Troubleshoot problems with your applications by running Prometheus Query Language (PromQL) queries on your project and examining the metrics visualized on a plot. The metrics provide information about the state of a cluster and any user-defined workloads that you are monitoring.

Cluster administrators can also open an embedded command line terminal instance in the web console in OpenShift Container Platform 4.7 and later.

> **NOTE**
>
> The default web console perspective that is shown depends on the role of the user. The **Developer** perspective is displayed by default if the user is recognised as a developer.

The **Developer** perspective provides workflows specific to developer use cases, such as the ability to:

- Create and deploy applications on OpenShift Container Platform by importing existing codebases, images, and container files.

- Visually interact with applications, components, and services associated with them within a project and monitor their deployment and build status.

- Group components within an application and connect the components within and across applications.

- Integrate serverless capabilities (Technology Preview).

- Create workspaces to edit your application code using Eclipse Che.

1.2.1. Accessing the Developer perspective

The **Developer** perspective in the OpenShift Container Platform web console provides workflows specific to developer use cases.

You can access the **Developer** perspective from the web console as follows:

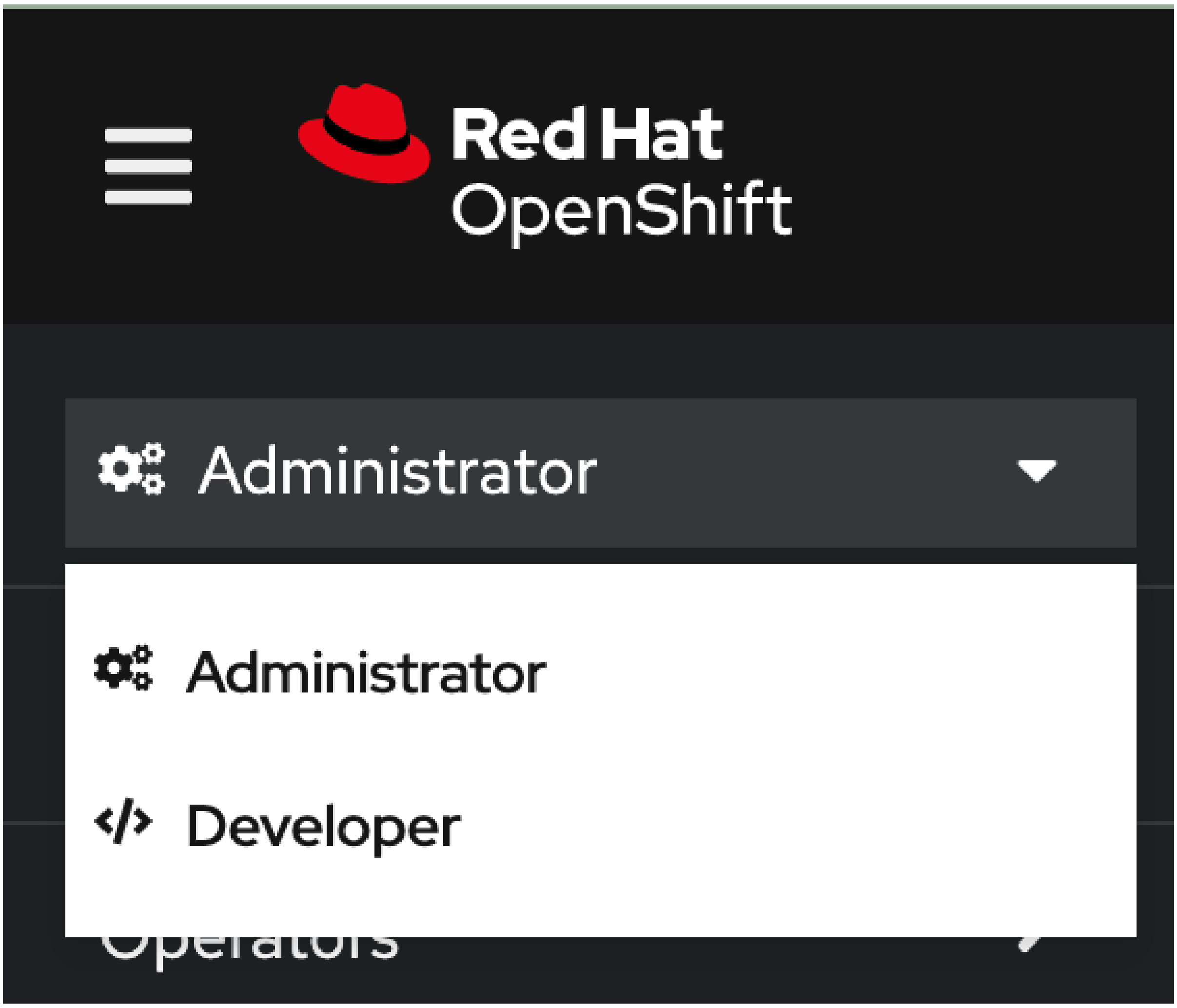
Prerequisites

To access the **Developer** perspective, ensure that you have logged in to the web console. The default view for the OpenShift Container Platform web console is the **Developer** perspective.

Procedure

1. Use the perspective switcher to switch to the **Developer** perspective. The **Topology** view with a list of all the projects in your cluster is displayed.

   Figure 1.1. Developer perspective

2. Select an existing project from the list or use the **Project** drop-down list to create a new project.

If you have no workloads or applications in the project, the **Topology** view displays the available options to create applications. If you have existing workloads, the **Topology** view graphically displays your workload nodes.

Additional resources

- Learn more about Cluster Administrator
- Overview of the **Administrator** perspective
- Creating and deploying applications on OpenShift Container Platform using the **Developer** perspective

- Viewing the applications in your project, verifying their deployment status, and interacting with them in the **Topology** view
- Viewing cluster information
- Configuring the web console
- Customizing the web console
- Launching an embedded command line terminal instance in the web console
- Creating quick start tutorials
- Disabling the web console

CHAPTER 2. ACCESSING THE WEB CONSOLE

The OpenShift Container Platform web console is a user interface accessible from a web browser. Developers can use the web console to visualize, browse, and manage the contents of projects.

2.1. PREREQUISITES

- JavaScript must be enabled to use the web console. For the best experience, use a web browser that supports WebSockets.
- Review the OpenShift Container Platform 4.x Tested Integrations page before you create the supporting infrastructure for your cluster.

2.2. UNDERSTANDING AND ACCESSING THE WEB CONSOLE

The web console runs as a pod on the master. The static assets required to run the web console are served by the pod. After OpenShift Container Platform is successfully installed using **openshift-install create cluster**, find the URL for the web console and login credentials for your installed cluster in the CLI output of the installation program. For example:

Example output

```
INFO Install complete!
INFO Run 'export KUBECONFIG=<your working directory>/auth/kubeconfig' to manage the cluster
with 'oc', the OpenShift CLI.
INFO The cluster is ready when 'oc login -u kubeadmin -p <provided>' succeeds (wait a few minutes).
INFO Access the OpenShift web-console here: https://console-openshift-
console.apps.demo1.openshift4-beta-abcorp.com
INFO Login to the console with user: kubeadmin, password: <provided>
```

Use those details to log in and access the web console.

For existing clusters that you did not install, you can use **oc whoami --show-console** to see the web console URL.

2.3. MULTICLUSTER CONSOLE

The multicluster console provides a single interface with consistent design for the hybrid cloud console. If you enable the feature, you can switch between Red Hat Advanced Cluster Management (RHACM) and the cluster console in the same browser tab. It provides a simplified and consistent design that allows for shared components.

2.3.1. Enabling multicluster in the web console

IMPORTANT

Multicluster console is a Technology Preview feature only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs) and might not be functionally complete. Red Hat does not recommend using them in production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process.

For more information about the support scope of Red Hat Technology Preview features, see https://access.redhat.com/support/offerings/techpreview/.

Prerequisites

- Your cluster must be using the latest version of OpenShift Container Platform.
- You must have Red Hat Advanced Cluster Management (RHACM) or the multicluster engine for Kubernetes (MCE) installed.
- You must have administrator privileges.

WARNING

Do not set this feature gate on production clusters. You will not be able to upgrade your cluster after applying the feature gate, and it cannot be undone.

Procedure

1. Log in to the OpenShift Container Platform web console using your credentials.
2. Enable RHACM in the administrator perspective by navigating from **Administration → Cluster Settings → Configuration → Console console.operator.openshift.io → Console Plugins** and click **Enable** for **acm**.
3. A pop-up window will appear notifying you that updating the enablement of this console plug-in will prompt for the console to be refreshed once it has been updated. Select **Enable** and click **Save**.
4. Repeat the previous two steps for the **mce** console plug-in immediately after enabling **acm**.
5. A pop-up window that states that a web console update is available will appear a few moments after you enable. Click **Refresh the web console** in the pop-up window to update.

   NOTE

   You might see the pop-up window to refresh the web console twice if the second redeployment has not occurred by the time you click **Refresh the web console**.

   - **local-cluster** and **All Clusters** is now visible above the perspectives in the navigation section.

6. Enable the feature gate by navigating from **Administration** → **Cluster Settings** → **Configuration** → **FeatureGate**, and edit the YAML template as follows:

```
spec:
   featureSet: TechPreviewNoUpgrade
```

7. Click **Save** to enable the multicluster console for all clusters.

> IMPORTANT
>
> After you save, this feature is enabled and cannot be undone.

Additional resources

- Enabling feature sets using the web console

CHAPTER 3. USING THE OPENSHIFT CONTAINER PLATFORM DASHBOARD TO GET CLUSTER INFORMATION

Access the OpenShift Container Platform dashboard, which captures high-level information about the cluster, by navigating to **Home** → **Dashboards** → **Overview** from the OpenShift Container Platform web console.

The OpenShift Container Platform dashboard provides various cluster information, captured in individual dashboard cards.

3.1. ABOUT THE OPENSHIFT CONTAINER PLATFORM DASHBOARDS PAGE

The OpenShift Container Platform dashboard consists of the following cards:

- **Details** provides a brief overview of informational cluster details.
  Status include **ok**, **error**, **warning**, **in progress**, and **unknown**. Resources can add custom status names.
  - Cluster ID
  - Provider
  - Version
- **Cluster Inventory** details number of resources and associated statuses. It is helpful when intervention is required to resolve problems, including information about:
  - Number of nodes
  - Number of pods
  - Persistent storage volume claims
  - Bare metal hosts in the cluster, listed according to their state (only available in **metal3** environment).
- **Cluster Capacity** charts help administrators understand when additional resources are required in the cluster. The charts contain an inner ring that displays current consumption, while an outer ring displays thresholds configured for the resource, including information about:
  - CPU time
  - Memory allocation
  - Storage consumed
  - Network resources consumed
- **Cluster Utilization** shows the capacity of various resources over a specified period of time, to help administrators understand the scale and frequency of high resource consumption.
- **Events** lists messages related to recent activity in the cluster, such as pod creation or virtual machine migration to another host.

- **Top Consumers** helps administrators understand how cluster resources are consumed. Click on a resource to jump to a detailed page listing pods and nodes that consume the largest amount of the specified cluster resource (CPU, memory, or storage).

CHAPTER 4. ADDING USER PREFERENCES

You can change the default preferences for your profile to meet your requirements. You can set your default project, topology view (graph/list), editing medium (form or YAML), and language preferences.

The changes made to the user preferences are automatically saved.

4.1. SETTING USER PREFERENCES

You can set the default user preferences for your cluster.

Procedure

1. Log in to the OpenShift Container Platform web console using your login credentials.

2. Use the masthead to access the user preferences under the user profile.

3. In the **General** section:

    a. In the **Perspective** field, you can set the default perspective you want to be logged in to. You can select the **Administrator** or the **Developer** perspective as required. If a perspective is not selected, you are logged into the perspective you last visited.

    b. In the **Project** field, select a project you want to work in. The console will default to the project every time you log in.

    c. In the **Topology** field, you can set the topology view to default to the graph or list view. If not selected, the console defaults to the last view you used.

    d. In the **Create/Edit resource method** field, you can set a preference for creating or editing a resource. If both the form and YAML options are available, the console defaults to your selection.

4. In the Language section, select **Default browser language** to use the default browser language settings. Otherwise, select the language that you want to use for the console.

CHAPTER 5. CONFIGURING THE WEB CONSOLE IN OPENSHIFT CONTAINER PLATFORM

You can modify the OpenShift Container Platform web console to set a logout redirect URL or disable the console.

5.1. PREREQUISITES

- Deploy an OpenShift Container Platform cluster.

5.2. CONFIGURING THE WEB CONSOLE

You can configure the web console settings by editing the **console.config.openshift.io** resource.

- Edit the **console.config.openshift.io** resource:

```
$ oc edit console.config.openshift.io cluster
```

The following example displays the sample resource definition for the console:

```
apiVersion: config.openshift.io/v1
kind: Console
metadata:
  name: cluster
spec:
  authentication:
    logoutRedirect: "" 1
status:
  consoleURL: "" 2
```

1 Specify the URL of the page to load when a user logs out of the web console. If you do not specify a value, the user returns to the login page for the web console. Specifying a **logoutRedirect** URL allows your users to perform single logout (SLO) through the identity provider to destroy their single sign-on session.

2 The web console URL. To update this to a custom value, see **Customizing the web console URL**.

CHAPTER 6. CUSTOMIZING THE WEB CONSOLE IN OPENSHIFT CONTAINER PLATFORM

You can customize the OpenShift Container Platform web console to set a custom logo, product name, links, notifications, and command line downloads. This is especially helpful if you need to tailor the web console to meet specific corporate or government requirements.

6.1. ADDING A CUSTOM LOGO AND PRODUCT NAME

You can create custom branding by adding a custom logo or custom product name. You can set both or one without the other, as these settings are independent of each other.

Prerequisites

- You must have administrator privileges.
- Create a file of the logo that you want to use. The logo can be a file in any common image format, including GIF, JPG, PNG, or SVG, and is constrained to a **max-height** of **60px**.

Procedure

1. Import your logo file into a config map in the **openshift-config** namespace:

```
$ oc create configmap console-custom-logo --from-file /path/to/console-custom-logo.png -n openshift-config
```

TIP

You can alternatively apply the following YAML to create the config map:

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: console-custom-logo
  namespace: openshift-config
data:
  console-custom-logo.png: <base64-encoded_logo> ... 1
```

1 Provide a valid base64-encoded logo.

2. Edit the web console's Operator configuration to include **customLogoFile** and **customProductName**:

```
$ oc edit consoles.operator.openshift.io cluster
```

```
apiVersion: operator.openshift.io/v1
kind: Console
metadata:
  name: cluster
spec:
  customization:
    customLogoFile:
      key: console-custom-logo.png
      name: console-custom-logo
    customProductName: My Console
```

Once the Operator configuration is updated, it will sync the custom logo config map into the console namespace, mount it to the console pod, and redeploy.

3. Check for success. If there are any issues, the console cluster Operator will report a **Degraded** status, and the console Operator configuration will also report a **CustomLogoDegraded** status, but with reasons like **KeyOrFilenameInvalid** or **NoImageProvided**.
To check the **clusteroperator**, run:

```
$ oc get clusteroperator console -o yaml
```

To check the console Operator configuration, run:

```
$ oc get consoles.operator.openshift.io -o yaml
```

6.2. CREATING CUSTOM LINKS IN THE WEB CONSOLE

Prerequisites

- You must have administrator privileges.

Procedure

1. From **Administration → Custom Resource Definitions**, click on **ConsoleLink**.

2. Select **Instances** tab

3. Click **Create Console Link** and edit the file:

```
apiVersion: console.openshift.io/v1
kind: ConsoleLink
metadata:
  name: example
spec:
  href: 'https://www.example.com'
  location: HelpMenu (1)
  text: Link 1
```

(1) Valid location settings are **HelpMenu**, **UserMenu**, **ApplicationMenu**, and **NamespaceDashboard**.

To make the custom link appear in all namespaces, follow this example:

```
apiVersion: console.openshift.io/v1
kind: ConsoleLink
metadata:
  name: namespaced-dashboard-link-for-all-namespaces
spec:
  href: 'https://www.example.com'
  location: NamespaceDashboard
  text: This appears in all namespaces
```

To make the custom link appear in only some namespaces, follow this example:

```
apiVersion: console.openshift.io/v1
kind: ConsoleLink
metadata:
  name: namespaced-dashboard-for-some-namespaces
spec:
  href: 'https://www.example.com'
  location: NamespaceDashboard
  # This text will appear in a box called "Launcher" under "namespace" or "project" in the web
console
  text: Custom Link Text
  namespaceDashboard:
    namespaces:
    # for these specific namespaces
    - my-namespace
    - your-namespace
    - other-namespace
```

To make the custom link appear in the application menu, follow this example:

```
apiVersion: console.openshift.io/v1
kind: ConsoleLink
metadata:
  name: application-menu-link-1
spec:
  href: 'https://www.example.com'
  location: ApplicationMenu
  text: Link 1
  applicationMenu:
    section: My New Section
    # image that is 24x24 in size
    imageURL: https://via.placeholder.com/24
```

4. Click **Save** to apply your changes.

6.3. CUSTOMIZING CONSOLE ROUTES

For **console** and **downloads** routes, custom routes functionality uses the **ingress** config route configuration API. If the **console** custom route is set up in both the **ingress** config and **console-operator** config, then the new **ingress** config custom route configuration takes precedent. The route configuration with the **console-operator** config is deprecated.

6.3.1. Customizing the console route

You can customize the console route by setting the custom hostname and TLS certificate in the **spec.componentRoutes** field of the cluster **Ingress** configuration.

Prerequisites

- You have logged in to the cluster as a user with administrative privileges.
- You have created a secret in the **openshift-config** namespace containing the TLS certificate and key. This is required if the domain for the custom hostname suffix does not match the cluster domain suffix. The secret is optional if the suffix matches.

  TIP

  You can create a TLS secret by using the **oc create secret tls** command.

Procedure

1. Edit the cluster **Ingress** configuration:

```
$ oc edit ingress.config.openshift.io cluster
```

2. Set the custom hostname and optionally the serving certificate and key:

```
apiVersion: config.openshift.io/v1
kind: Ingress
metadata:
  name: cluster
spec:
  componentRoutes:
    - name: console
      namespace: openshift-console
      hostname: <custom_hostname> 1
      servingCertKeyPairSecret:
        name: <secret_name> 2
```

1 The custom hostname.

2 Reference to a secret in the **openshift-config** namespace that contains a TLS certificate (**tls.crt**) and key (**tls.key**). This is required if the domain for the custom hostname suffix does not match the cluster domain suffix. The secret is optional if the suffix matches.

3. Save the file to apply the changes.

6.3.2. Customizing the download route

You can customize the download route by setting the custom hostname and TLS certificate in the **spec.componentRoutes** field of the cluster **Ingress** configuration.

Prerequisites

- You have logged in to the cluster as a user with administrative privileges.
- You have created a secret in the **openshift-config** namespace containing the TLS certificate and key. This is required if the domain for the custom hostname suffix does not match the cluster domain suffix. The secret is optional if the suffix matches.

TIP

You can create a TLS secret by using the **oc create secret tls** command.

Procedure

1. Edit the cluster **Ingress** configuration:

```
$ oc edit ingress.config.openshift.io cluster
```

2. Set the custom hostname and optionally the serving certificate and key:

```
apiVersion: config.openshift.io/v1
kind: Ingress
metadata:
  name: cluster
spec:
  componentRoutes:
    - name: downloads
      namespace: openshift-console
      hostname: <custom_hostname> 1
      servingCertKeyPairSecret:
        name: <secret_name> 2
```

1 The custom hostname.

2 Reference to a secret in the **openshift-config** namespace that contains a TLS certificate (**tls.crt**) and key (**tls.key**). This is required if the domain for the custom hostname suffix does not match the cluster domain suffix. The secret is optional if the suffix matches.

3. Save the file to apply the changes.

6.4. CUSTOMIZING THE LOGIN PAGE

Create Terms of Service information with custom login pages. Custom login pages can also be helpful if you use a third-party login provider, such as GitHub or Google, to show users a branded page that they trust and expect before being redirected to the authentication provider. You can also render custom error pages during the authentication process.

NOTE

Customizing the error template is limited to identity providers (IDPs) that use redirects, such as request header and OIDC-based IDPs. It does not have an effect on IDPs that use direct password authentication, such as LDAP and HTPasswd.

Prerequisites

- You must have administrator privileges.

Procedure

1. Run the following commands to create templates you can modify:

```
$ oc adm create-login-template > login.html
```

```
$ oc adm create-provider-selection-template > providers.html
```

```
$ oc adm create-error-template > errors.html
```

2. Create the secrets:

```
$ oc create secret generic login-template --from-file=login.html -n openshift-config
```

```
$ oc create secret generic providers-template --from-file=providers.html -n openshift-config
```

```
$ oc create secret generic error-template --from-file=errors.html -n openshift-config
```

3. Run:

```
$ oc edit oauths cluster
```

4. Update the specification:

```
spec:
  templates:
    error:
        name: error-template
    login:
        name: login-template
    providerSelection:
        name: providers-template
```

Run **oc explain oauths.spec.templates** to understand the options.

6.5. DEFINING A TEMPLATE FOR AN EXTERNAL LOG LINK

If you are connected to a service that helps you browse your logs, but you need to generate URLs in a particular way, then you can define a template for your link.

Prerequisites

- You must have administrator privileges.

Procedure

1. From **Administration → Custom Resource Definitions**, click on **ConsoleExternalLogLink**.

2. Select **Instances** tab

3. Click **Create Console External Log Link**and edit the file:

```
apiVersion: console.openshift.io/v1
kind: ConsoleExternalLogLink
metadata:
  name: example
spec:
  hrefTemplate: >-
    https://example.com/logs?
resourceName=${resourceName}&containerName=${containerName}&resourceNamespace=$
{resourceNamespace}&podLabels=${podLabels}
  text: Example Logs
```

6.6. CREATING CUSTOM NOTIFICATION BANNERS

Prerequisites

- You must have administrator privileges.

Procedure

1. From **Administration → Custom Resource Definitions**, click on **ConsoleNotification**.

2. Select **Instances** tab

3. Click **Create Console Notification** and edit the file:

```
apiVersion: console.openshift.io/v1
kind: ConsoleNotification
metadata:
  name: example
spec:
  text: This is an example notification message with an optional link.
  location: BannerTop ①
  link:
    href: 'https://www.example.com'
    text: Optional link text
  color: '#fff'
  backgroundColor: '#0088ce'
```

① Valid location settings are **BannerTop**, **BannerBottom**, and **BannerTopBottom**.

4. Click **Create** to apply your changes.

6.7. CUSTOMIZING CLI DOWNLOADS

You can configure links for downloading the CLI with custom link text and URLs, which can point directly to file packages or to an external page that provides the packages.

Prerequisites

- You must have administrator privileges.

Procedure

1. Navigate to **Administration → Custom Resource Definitions**.

2. Select **ConsoleCLIDownload** from the list of Custom Resource Definitions (CRDs).

3. Click the **YAML** tab, and then make your edits:

```
apiVersion: console.openshift.io/v1
kind: ConsoleCLIDownload
metadata:
  name: example-cli-download-links-for-foo
spec:
  description: |
    This is an example of download links for foo
  displayName: example-foo
  links:
  - href: 'https://www.example.com/public/foo.tar'
    text: foo for linux
  - href: 'https://www.example.com/public/foo.mac.zip'
    text: foo for mac
  - href: 'https://www.example.com/public/foo.win.zip'
    text: foo for windows
```

4. Click the **Save** button.

6.8. ADDING YAML EXAMPLES TO KUBERNETES RESOURCES

You can dynamically add YAML examples to any Kubernetes resources at any time.

Prerequisites

- You must have cluster administrator privileges.

Procedure

1. From **Administration → Custom Resource Definitions**, click on **ConsoleYAMLSample**.

2. Click **YAML** and edit the file:

```
apiVersion: console.openshift.io/v1
kind: ConsoleYAMLSample
metadata:
  name: example
spec:
  targetResource:
    apiVersion: batch/v1
    kind: Job
  title: Example Job
  description: An example Job YAML sample
  yaml: |
    apiVersion: batch/v1
    kind: Job
    metadata:
      name: countdown
    spec:
      template:
        metadata:
          name: countdown
        spec:
          containers:
```

```
- name: counter
  image: centos:7
  command:
  - "bin/bash"
  - "-c"
  - "for i in 9 8 7 6 5 4 3 2 1 ; do echo $i ; done"
restartPolicy: Never
```

Use **spec.snippet** to indicate that the YAML sample is not the full YAML resource definition, but a fragment that can be inserted into the existing YAML document at the user’s cursor.

3. Click **Save**.

CHAPTER 7. ADDING A DYNAMIC PLUG-IN TO THE OPENSHIFT CONTAINER PLATFORM WEB CONSOLE

You can create and deploy a dynamic plug-in on your cluster that is loaded at run-time.

IMPORTANT

Creating a dynamic plug-in is a Technology Preview feature only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs) and might not be functionally complete. Red Hat does not recommend using them in production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process.

For more information about the support scope of Red Hat Technology Preview features, see https://access.redhat.com/support/offerings/techpreview/.

7.1. ABOUT DYNAMIC PLUG-INS

A dynamic plug-in allows you to add custom pages and other extensions to your interface at runtime. The **ConsolePlugin** custom resource registers plug-ins with the console, and a cluster administrator enables plug-ins in the **console-operator** configuration.

7.1.1. Key features

A dynamic plug-in allows you to make the following customizations to the OpenShift Container Platform experience:

- Add custom pages.
- Add perspectives and update navigation items.
- Add tabs and actions to resource pages.

7.1.2. PatternFly 4 guidelines

When creating your plug-in, follow these guidelines for using PatternFly:

- Use PatternFly4 components and PatternFly CSS variables. Core PatternFly components are available through the SDK. Using PatternFly components and variables will help your plug-in look consistent in future console versions.
- Make your plug-in accessible by following PatternFly's accessibility fundamentals.
- *Do not* use other CSS libraries such as Bootstrap or Tailwind. They can conflict with PatternFly and will not match the console look and feel.

7.1.3. General guidelines

When creating your plug-in, follow these general guidelines:

- Prefix your CSS class names with your plug-in name to avoid collisions. For example, **my-plugin__heading** and **my-plugin__icon**.
- Maintain a consistent look, feel, and behavior with other console pages.

- Follow react-i18next localization guidelines when creating your plug-in. You can use the **useTranslation** hook like the one in the following example:

```
conster Header: React.FC = () => {
  const { t } = useTranslation('plugin__console-demo-plugin');
  return <h1>{t('Hello, World!')}</h1>;
};
```

- *Do not* use console CSS classes in your markup or override console CSS classes. These are not APIs and are subject to change. Using them might break your plug-in. Avoid selectors like element selectors that could affect markup outside of your plug-in's components.

7.2. ENABLE DYNAMIC PLUG-INS IN THE WEB CONSOLE

Cluster administrators can enable plug-ins in the web console browser. Dynamic plug-ins are disabled by default. In order to enable, a cluster administrator will need to enable them in the **console-operator** configuration.

Procedure

1. In the **Administration** → **Cluster Settings** page of the web console, click the **Configuration** tab.

2. Click the **Console operator.openshift.io** configuration resource.

3. From there, click the **Console plugins** tab to view the dynamic plug-ins running.

4. In the **Status** column, click **Enable console plugin** in the pop-over menu, which will launch the **Console plugin enablement** modal.

5. Click **Enable** and **Save**.

Verification

- Refresh the browser to view the enabled plug-in.

7.3. GETTING STARTED WITH DYNAMIC PLUG-INS

To get started using the dynamic plug-in, you must set up your environment to write a new OpenShift Console dynamic plug-in.

Prerequisites

- Ensure you have **Node.js** installed.

- Ensure you have **yarn** installed.

Procedure

1. Edit the plug-in metadata in the **consolePlugin** declaration of **package.json**.

```
"consolePlugin": {
  "name": "my-plugin", 1
  "version": "0.0.1", 2
  "displayName": "My Plugin", ③
  "description": "Enjoy this shiny, new console plugin!", ④
  "exposedModules": {
    "ExamplePage": "./components/ExamplePage"
  },
  "dependencies": {
    "@console/pluginAPI": "*"
  }
}
```

① Update the name of your plug-in.

② Update the version.

③ Update the display name for your plug-in.

④ Update the description with a synopsis about your plug-in.

7.4. RUNNING YOUR DYNAMIC PLUG-IN

You can run the plug-in using a local development environment. The OpenShift Container Platform web console runs in a container connected to the cluster you have logged into.

Prerequisites

- You must have the OpenShift CLI (**oc**) installed.
- You must have an OpenShift cluster running.
- You must have Docker or at least v3.2.0 of Podman installed.

Procedure

1. Build a plug-in and generate the output to the **dist** directory by running

   ```
   $ yarn build
   ```

2. Start an HTTP server by running

   ```
   $ yarn http-server
   ```

3. The HTTP server, which runs on port 9001, generates the following assets with **caching** disabled and **CORS** enabled.

   ```
   Starting up http-server, serving ./dist
   Available on:
     http://127.0.0.1:9001
     http://192.168.1.190:9001
     http://10.40.192.80:9001
   Hit CTRL-C to stop the server
   ```

4. Optional: Add additional server options to the script by running

```
$ yarn http-server -a <server name>
```

5. Direct **bridge** to proxy requests to your local plug-in asset server by running

```
$ ./bin/bridge -plugins console-demo-plugin=http://localhost:9001/
```

Verification

- Visit local host to view the running plug-in. Inspect the value of **window.SERVER_FLAGS.consolePlugins** to see the list of plug-ins which load at runtime.

7.5. ADDING A NEW EXTENSION TO YOUR PLUG-IN

You can add extensions that allow you to customize your plug-in. Those extensions are then loaded to the console at run-time.

1. Edit the **console-extensions.json** file:

```
[
 {
   "type": "console.flag", ①
   "properties": {
     "handler": { "$codeRef": "barUtils.testHandler" } ②
   }
  },
  {
   "type": "console.flag/model",
   "properties": {
     "flag": "EXAMPLE",
     "model": {
       "group": "kubevirt.io",
       "version": "v1alpha3",
       "kind": "ExampleModel"
     }
   }
  }
]
```

① Add the extension type(s) you want to include with this plug-in. You can include multiple extensions separated with a comma.

② The **$codeRef** value should be formatted as either **moduleName.exportName** for a named export or **moduleName** for the default export. Only the plug-in's exported modules can be used in code references.

7.5.1. Dynamic plug-in extension types

7.5.1.1. console.action/filter

7.5.1.1.1. Summary

ActionFilter can be used to filter an action.

7.5.1.1.2. Properties

Name	Value Type	Optional	Description
contextId	**string**	no	The context ID helps to narrow the scope of contributed actions to a particular area of the application. Examples include **topology** and **helm**.
filter	**CodeRef<(scope: any, action: Action) ⇒ boolean>**	no	A function that will filter actions based on some conditions. **scope**: The scope in which actions should be provided for. A hook might be required if you want to remove the **ModifyCount** action from a deployment with a horizontal pod autoscaler (HPA).

7.5.1.2. console.action/group

7.5.1.2.1. Summary

ActionGroup contributes an action group that can also be a submenu.

7.5.1.2.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	ID used to identify the action section.
label	**string**	yes	The label to display in the UI. Required for submenus.
submenu	**boolean**	yes	Whether this group should be displayed as submenu.

Name	Value Type	Optional	Description
insertBefore	**string** | **string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string** | **string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. The **insertBefore** value takes precedence.

7.5.1.3. **console.action/provider**

7.5.1.3.1. Summary

ActionProvider contributes a hook that returns list of actions for specific context.

7.5.1.3.2. Properties

Name	Value Type	Optional	Description
contextId	**string**	no	The context ID helps to narrow the scope of contributed actions to a particular area of the application. Examples include **topology** and **helm**.
provider	**CodeRef<ExtensionHook<Action[], any>>**	no	A React hook that returns actions for the given scope. If **contextId** = **resource**, then the scope will always be a Kubernetes resource object.

7.5.1.4. **console.action/resource-provider**

7.5.1.4.1. Summary

ResourceActionProvider contributes a hook that returns list of actions for specific resource model.

7.5.1.4.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sKindVersionModel**	no	The model for which this provider provides actions for.
provider	**CodeRef<ExtensionHook<Action[], any>>**	no	A react hook which returns actions for the given resource model

7.5.1.5. console.alert-action

7.5.1.5.1. Summary

(not available)

7.5.1.5.2. Properties

Name	Value Type	Optional	Description
alert	**string**	no	
text	**string**	no	
action	**CodeRef<(alert: any) ⇒ void>**	no	

7.5.1.6. console.catalog/item-filter

7.5.1.6.1. Summary

(not available)

7.5.1.6.2. Properties

Name	Value Type	Optional	Description
catalogId	**string | string[]**	no	The unique identifier for the catalog this provider contributes to.
type	**string**	no	Type ID for the catalog item type.

Name	Value Type	Optional	Description
filter	**CodeRef<(item: CatalogItem) ⇒ boolean>**	no	Filters items of a specific type. Value is a function that takes **CatalogItem[]** and returns a subset based on the filter criteria.

7.5.1.7. **console.catalog/item-metadata**

7.5.1.7.1. Summary

(not available)

7.5.1.7.2. Properties

Name	Value Type	Optional	Description
catalogId	**string** | **string[]**	no	The unique identifier for the catalog this provider contributes to.
type	**string**	no	Type ID for the catalog item type.
provider	**CodeRef<ExtensionHook<CatalogItemMetadataProviderFunction, CatalogExtensionHookOptions>>**	no	A hook which returns a function that will be used to provide metadata to catalog items of a specific type.

7.5.1.8. **console.catalog/item-provider**

7.5.1.8.1. Summary

(not available)

7.5.1.8.2. Properties

Name	Value Type	Optional	Description
catalogId	**string** | **string[]**	no	The unique identifier for the catalog this provider contributes to.

Name	Value Type	Optional	Description
type	**string**	no	Type ID for the catalog item type.
title	**string**	no	Title for the catalog item provider
provider	**CodeRef<ExtensionHook<CatalogItem<any>[], CatalogExtensionHookOptions>>**	no	Fetch items and normalize it for the catalog. Value is a react effect hook.
priority	**number**	yes	Priority for this provider. Defaults to **0**. Higher priority providers may override catalog items provided by other providers.

7.5.1.9. **console.catalog/item-type**

7.5.1.9.1. Summary

(not available)

7.5.1.9.2. Properties

Name	Value Type	Optional	Description
type	**string**	no	Type for the catalog item.
title	**string**	no	Title for the catalog item.
catalogDescription	**string | CodeRef<React.ReactNode>**	yes	Description for the type specific catalog.
typeDescription	**string**	yes	Description for the catalog item type.
filters	**CatalogItemAttribute[]**	yes	Custom filters specific to the catalog item.

Name	Value Type	Optional	Description
groupings	**CatalogItemAttribute []**	yes	Custom groupings specific to the catalog item.

7.5.1.10. **console.catalog/item-type-metadata**

7.5.1.10.1. Summary

(not available)

7.5.1.10.2. Properties

Name	Value Type	Optional	Description
type	**string**	no	Type for the catalog item.
filters	**CatalogItemAttribute []**	yes	Custom filters specific to the catalog item.
groupings	**CatalogItemAttribute []**	yes	Custom groupings specific to the catalog item.

7.5.1.11. **console.cluster-overview/inventory-item**

7.5.1.11.1. Summary

Adds a new inventory item into cluster overview page.

7.5.1.11.2. Properties

Name	Value Type	Optional	Description
component	**CodeRef<React.ComponentType<{}>>**	no	The component to be rendered.

7.5.1.12. **console.cluster-overview/multiline-utilization-item**

7.5.1.12.1. Summary

Adds a new cluster overview multi-line utilization item.

7.5.1.12.2. Properties

Name	Value Type	Optional	Description
title	**string**	no	The title of the utilization item.
getUtilizationQueries	**CodeRef<GetMultilineQueries>**	no	Prometheus utilization query.
humanize	**CodeRef<Humanize>**	no	Convert Prometheus data to human-readable form.
TopConsumerPopovers	**CodeRef<React.ComponentType<TopConsumerPopoverProps>[]>**	yes	Shows Top consumer popover instead of plain value

7.5.1.13. console.cluster-overview/utilization-item

7.5.1.13.1. Summary

Adds a new cluster overview utilization item.

7.5.1.13.2. Properties

Name	Value Type	Optional	Description
title	**string**	no	The title of the utilization item.
getUtilizationQuery	**CodeRef<GetQuery>**	no	Prometheus utilization query.
humanize	**CodeRef<Humanize>**	no	Convert Prometheus data to human-readable form.
getTotalQuery	**CodeRef<GetQuery>**	yes	Prometheus total query.
getRequestQuery	**CodeRef<GetQuery>**	yes	Prometheus request query.
getLimitQuery	**CodeRef<GetQuery>**	yes	Prometheus limit query.
TopConsumerPopover	**CodeRef<React.ComponentType<TopConsumerPopoverProps>>**	yes	Shows Top consumer popover instead of plain value

7.5.1.14. **console.context-provider**

7.5.1.14.1. Summary

Adds a new React context provider to the web console application root.

7.5.1.14.2. Properties

Name	Value Type	Optional	Description
provider	**CodeRef<Provider<T>>**	no	Context Provider component.
useValueHook	**CodeRef<() ⇒ T>**	no	Hook for the Context value.

7.5.1.15. **console.dashboards/card**

7.5.1.15.1. Summary

Adds a new dashboard card.

7.5.1.15.2. Properties

Name	Value Type	Optional	Description
tab	**string**	no	The ID of the dashboard tab to which the card will be added.
position	**'LEFT' | 'RIGHT' | 'MAIN'**	no	The grid position of the card on the dashboard.
component	**CodeRef<React.ComponentType<{}>>**	no	Dashboard card component.
span	**OverviewCardSpan**	yes	Card’s vertical span in the column. Ignored for small screens; defaults to **12**.

7.5.1.16. **console.dashboards/overview/activity/resource**

7.5.1.16.1. Summary

Adds an activity to the Activity Card of Overview Dashboard where the triggering of activity is based on watching a Kubernetes resource.

7.5.1.16.2. Properties

Name	Value Type	Optional	Description
k8sResource	**CodeRef<FirehoseResource & { isList: true; }>**	no	The utilization item to be replaced.
component	**CodeRef<React.ComponentType<K8sActivityProps<T>>>**	no	The action component.
isActivity	**CodeRef<(resource: T) ⇒ boolean>**	yes	Function which determines if the given resource represents the action. If not defined, every resource represents activity.
getTimestamp	**CodeRef<(resource: T) ⇒ Date>**	yes	Time stamp for the given action, which will be used for ordering.

7.5.1.17. **console.dashboards/overview/detail/item**

7.5.1.17.1. Summary

Adds an item to the **Details** card of **Overview** dashboard

7.5.1.17.2. Properties

Name	Value Type	Optional	Description
component	**CodeRef<React.ComponentType<{}>>**	no	The value, based on the **DetailItem** component

7.5.1.18. **console.dashboards/overview/health/operator**

7.5.1.18.1. Summary

Adds a health subsystem to the status card of the **Overview** dashboard, where the source of status is a Kubernetes REST API.

7.5.1.18.2. Properties

Name	Value Type	Optional	Description

Name	Value Type	Optional	Description
title	**string**	no	Title of Operators section in the pop-up menu.
resources	**CodeRef<FirehoseResource[]>**	no	Kubernetes resources which will be fetched and passed to **healthHandler**.
getOperatorsWithStatuses	**CodeRef<GetOperatorsWithStatuses<T>>**	yes	Resolves status for the Operators.
operatorRowLoader	**CodeRef<React.ComponentType<OperatorRowProps<T>>>**	yes	Loader for pop-up row component.
viewAllLink	**string**	yes	Links to all resources page. If not provided, then a list page of the first resource from resources prop is used.

7.5.1.19. **console.dashboards/overview/health/prometheus**

7.5.1.19.1. Summary

Adds a health subsystem to the status card of Overview dashboard where the source of status is Prometheus.

7.5.1.19.2. Properties

Name	Value Type	Optional	Description
title	**string**	no	The display name of the subsystem.
queries	**string[]**	no	The Prometheus queries
healthHandler	**CodeRef<PrometheusHealthHandler>**	no	Resolve the subsystem’s health.

Name	Value Type	Optional	Description
additionalResource	**CodeRef<FirehoseResource>**	yes	Additional resource which will be fetched and passed to **healthHandler**.
popupComponent	**CodeRef<React.ComponentType<PrometheusHealthPopupProps>>**	yes	Loader for pop-up menu content. If defined, a health item is represented as a link, which opens a pop-up menu with the given content.
popupTitle	**string**	yes	The title of the popover.
disallowedControlPlaneTopology	**string[]**	yes	Control plane topology for which the subsystem should be hidden.

7.5.1.20. **console.dashboards/overview/health/resource**

7.5.1.20.1. Summary

Adds a health subsystem to the status card of Overview dashboard where the source of status is a Kubernetes Resource.

7.5.1.20.2. Properties

Name	Value Type	Optional	Description
title	**string**	no	The display name of the subsystem.
resources	**CodeRef<WatchK8sResources<T>>**	no	Kubernetes resources that will be fetched and passed to **healthHandler**.
healthHandler	**CodeRef<ResourceHealthHandler<T>>**	no	Resolve the subsystem’s health.
popupComponent	**CodeRef<WatchK8sResults<T>>**	yes	Loader for pop-up menu content. If defined, a health item is represented as a link, which opens a pop-up menu with the given content.

Name	Value Type	Optional	Description
popupTitle	**string**	yes	The title of the popover.

7.5.1.21. **console.dashboards/overview/health/url**

7.5.1.21.1. Summary

Adds a health subsystem to the status card of Overview dashboard where the source of status is a Kubernetes REST API.

7.5.1.21.2. Properties

Name	Value Type	Optional	Description
title	**string**	no	The display name of the subsystem.
url	**string**	no	The URL to fetch data from. It will be prefixed with base Kubernetes URL.
healthHandler	`CodeRef<URLHealthHandler<T, K8sResourceCommon	K8sResourceCommon[] >>`	no
Resolve the subsystem's health.	**additionalResource**	**CodeRef<FirehoseResource>**	yes
Additional resource which will be fetched and passed to **healthHandler**.	**popupComponent**	**CodeRef<React.ComponentType<{ healthResult?: T; healthResultError?: any; k8sResult?: FirehoseResult<R>; }>>**	yes
Loader for popup content. If defined, a health item will be represented as a link which opens popup with given content.	**popupTitle**	**string**	yes

7.5.1.22. **console.dashboards/overview/inventory/item**

7.5.1.22.1. Summary

Adds a resource tile to the overview inventory card.

7.5.1.22.2. Properties

Name	Value Type	Optional	Description
model	**CodeRef<T>**	no	The model for **resource** which will be fetched. Used to get the model's **label** or **abbr**.
mapper	**CodeRef<StatusGroupMapper<T, R>>**	yes	Function which maps various statuses to groups.
additionalResources	**CodeRef<WatchK8sResources<R>>**	yes	Additional resources which will be fetched and passed to the **mapper** function.

7.5.1.23. console.dashboards/overview/inventory/item/group

7.5.1.23.1. Summary

Adds an inventory status group.

7.5.1.23.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	The id of the status group.
icon	**CodeRef<React.ReactElement<any, string | React.JSXElementConstructor<any>>>**	no	React component representing the status group icon.

7.5.1.24. console.dashboards/overview/inventory/item/replacement

7.5.1.24.1. Summary

Replaces an overview inventory card.

7.5.1.24.2. Properties

Name	Value Type	Optional	Description
model	**CodeRef<T>**	no	The model for **resource** which will be fetched. Used to get the model's **label** or **abbr**.
mapper	**CodeRef<StatusGroupMapper<T, R>>**	yes	Function which maps various statuses to groups.
additionalResources	**CodeRef<WatchK8sResources<R>>**	yes	Additional resources which will be fetched and passed to the **mapper** function.

7.5.1.25. **console.dashboards/overview/prometheus/activity/resource**

7.5.1.25.1. Summary

Adds an activity to the Activity Card of Prometheus Overview Dashboard where the triggering of activity is based on watching a Kubernetes resource.

7.5.1.25.2. Properties

Name	Value Type	Optional	Description
queries	**string[]**	no	Queries to watch
component	**CodeRef<React.ComponentType<PrometheusActivityProps>>**	no	The action component.
isActivity	**CodeRef<(results: PrometheusResponse[]) ⇒ boolean>**	yes	Function which determines if the given resource represents the action. If not defined, every resource represents activity.

7.5.1.26. **console.dashboards/project/overview/item**

7.5.1.26.1. Summary

Adds a resource tile to the project overview inventory card.

7.5.1.26.2. Properties

Name	Value Type	Optional	Description
model	**CodeRef<T>**	no	The model for **resource** which will be fetched. Used to get the model's **label** or **abbr**.
mapper	**CodeRef<StatusGroupMapper<T, R>>**	yes	Function which maps various statuses to groups.
additionalResources	**CodeRef<WatchK8sResources<R>>**	yes	Additional resources which will be fetched and passed to the **mapper** function.

7.5.1.27. console.dashboards/tab

7.5.1.27.1. Summary

Adds a new dashboard tab, placed after the **Overview** tab.

7.5.1.27.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique tab identifier, used as tab link **href** and when adding cards to this tab.
navSection	**'home' | 'storage'**	no	Navigation section to which the tab belongs to.
title	**string**	no	The title of the tab.

7.5.1.28. console.file-upload

7.5.1.28.1. Summary

(not available)

7.5.1.28.2. Properties

Name	Value Type	Optional	Description

Name	Value Type	Optional	Description
fileExtensions	**string[]**	no	Supported file extensions.
handler	**CodeRef<FileUploadHandler>**	no	Function which handles the file drop action.

7.5.1.29. console.flag

7.5.1.29.1. Summary

Gives full control over the web console feature flags.

7.5.1.29.2. Properties

Name	Value Type	Optional	Description
handler	**CodeRef<FeatureFlagHandler>**	no	Used to set or unset arbitrary feature flags.

7.5.1.30. console.flag/hookProvider

7.5.1.30.1. Summary

Gives full control over the web console feature flags with hook handlers.

7.5.1.30.2. Properties

Name	Value Type	Optional	Description
handler	**CodeRef<FeatureFlagHandler>**	no	Used to set or unset arbitrary feature flags.

7.5.1.31. console.flag/model

7.5.1.31.1. Summary

Adds a new web console feature flag driven by the presence of a CRD on the cluster.

7.5.1.31.2. Properties

Name	Value Type	Optional	Description

Name	Value Type	Optional	Description
flag	**string**	no	The name of the flag to set once the CRD is detected.
model	**ExtensionK8sModel**	no	The model which refers to a **CustomResourceDefinition**.

7.5.1.32. console.global-config

7.5.1.32.1. Summary

(not available)

7.5.1.32.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	Unique identifier for the cluster config resource instance.
name	**string**	no	The name of the cluster config resource instance.
model	**ExtensionK8sModel**	no	The model which refers to a cluster config resource.
namespace	**string**	no	The namespace of the cluster config resource instance.

7.5.1.33. console.model-metadata

7.5.1.33.1. Summary

Customize the display of models by overriding values retrieved and generated through API discovery.

7.5.1.33.2. Properties

Name	Value Type	Optional	Description

Name	Value Type	Optional	Description
model	**ExtensionK8sGroupModel**	no	The model to customize. May specify only a group, or optional version and kind.
badge	**ModelBadge**	yes	Whether to consider this model reference as Technology Preview or Developer Preview.
color	**string**	yes	The color to associate to this model.
label	**string**	yes	Override the label. Requires **kind** be provided.
labelPlural	**string**	yes	Override the plural label. Requires **kind** be provided.
abbr	**string**	yes	Customize the abbreviation. Defaults to all uppercase characters in **kind**, up to 4 characters long. Requires that **kind** is provided.

7.5.1.34. console.navigation/href

7.5.1.34.1. Summary

(not available)

7.5.1.34.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this item.
name	**string**	no	The name of this item.
href	**string**	no	The link href value.

Name	Value Type	Optional	Description
perspective	**string**	yes	The perspective ID to which this item belongs to. If not specified, contributes to the default perspective.
section	**string**	yes	Navigation section to which this item belongs to. If not specified, render this item as a top level link.
dataAttributes	**{ [key: string]: string; }**	yes	Adds data attributes to the DOM.
startsWith	**string[]**	yes	Mark this item as active when the URL starts with one of these paths.
insertBefore	**string | string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string | string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. **insertBefore** takes precedence.
namespaced	**boolean**	yes	If **true**, adds **/ns/active-namespace** to the end.
prefixNamespaced	**boolean**	yes	If **true**, adds **/k8s/ns/active-namespace** to the beginning

7.5.1.35. console.navigation/resource-cluster

7.5.1.35.1. Summary

(not available)

7.5.1.35.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this item.
model	**ExtensionK8sModel**	no	The model for which this navigation item links to.
perspective	**string**	yes	The perspective ID to which this item belongs to. If not specified, contributes to the default perspective.
section	**string**	yes	Navigation section to which this item belongs to. If not specified, render this item as a top-level link.
dataAttributes	**{ [key: string]: string; }**	yes	Adds data attributes to the DOM.
startsWith	**string[]**	yes	Mark this item as active when the URL starts with one of these paths.
insertBefore	**string | string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string | string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. **insertBefore** takes precedence.
name	**string**	yes	Overrides the default name. If not supplied the name of the link will equal the plural value of the model.

7.5.1.36. console.navigation/resource-ns

7.5.1.36.1. Summary

(not available)

7.5.1.36.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this item.
model	**ExtensionK8sModel**	no	The model for which this navigation item links to.
perspective	**string**	yes	The perspective ID to which this item belongs to. If not specified, contributes to the default perspective.
section	**string**	yes	Navigation section to which this item belongs to. If not specified, render this item as a top-level link.
dataAttributes	**{ [key: string]: string; }**	yes	Adds data attributes to the DOM.
startsWith	**string[]**	yes	Mark this item as active when the URL starts with one of these paths.
insertBefore	**string | string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string | string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. **insertBefore** takes precedence.
name	**string**	yes	Overrides the default name. If not supplied the name of the link will equal the plural value of the model.

7.5.1.37. **console.navigation/section**

7.5.1.37.1. Summary

(not available)

7.5.1.37.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this item.
perspective	**string**	yes	The perspective ID to which this item belongs to. If not specified, contributes to the default perspective.
dataAttributes	**{ [key: string]: string; }**	yes	Adds data attributes to the DOM.
insertBefore	**string | string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string | string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. **insertBefore** takes precedence.
name	**string**	yes	Name of this section. If not supplied, only a separator will be shown above the section.

7.5.1.38. **console.navigation/separator**

7.5.1.38.1. Summary

(not available)

7.5.1.38.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this item.

Name	Value Type	Optional	Description
perspective	**string**	yes	The perspective ID to which this item belongs to. If not specified, contributes to the default perspective.
section	**string**	yes	Navigation section to which this item belongs to. If not specified, render this item as a top level link.
dataAttributes	**{ [key: string]: string; }**	yes	Adds data attributes to the DOM.
insertBefore	**string | string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string | string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. **insertBefore** takes precedence.

7.5.1.39. **console.page/resource/details**

7.5.1.39.1. Summary

Adds a new resource details page to the web console router.

7.5.1.39.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sGroupKindModel**	no	The model for which this resource page links to.

Name	Value Type	Optional	Description
component	**CodeRef<React.ComponentType<{ match: match<{}>; namespace: string; model: ExtensionK8sModel; }>>**	no	The component to be rendered when the route matches.

7.5.1.40. console.page/resource/list

7.5.1.40.1. Summary

Adds new resource list page to Console router.

7.5.1.40.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sGroupKindModel**	no	The model for which this resource page links to.
component	**CodeRef<React.ComponentType<{ match: match<{}>; namespace: string; model: ExtensionK8sModel; }>>**	no	The component to be rendered when the route matches.

7.5.1.41. console.page/route

7.5.1.41.1. Summary

Adds a new page to the web console router. See React Router.

7.5.1.41.2. Properties

Name	Value Type	Optional	Description
component	**CodeRef<React.ComponentType<RouteComponentProps<{}, StaticContext, any>>>**	no	The component to be rendered when the route matches.

Name	Value Type	Optional	Description
path	**string** | **string[]**	no	Valid URL path or array of paths that **path-to-regexp@^1.7.0** understands.
perspective	**string**	yes	The perspective to which this page belongs to. If not specified, contributes to all perspectives.
exact	**boolean**	yes	When true, will only match if the path matches the **location.pathname** exactly.

7.5.1.42. console.page/route/standalone

7.5.1.42.1. Summary

Adds a new standalone page, rendered outside the common page layout, to the web console router. See React Router.

7.5.1.42.2. Properties

Name	Value Type	Optional	Description
component	**CodeRef<React.ComponentType<RouteComponentProps<{}, StaticContext, any>>>**	no	The component to be rendered when the route matches.
path	**string** | **string[]**	no	Valid URL path or array of paths that **path-to-regexp@^1.7.0** understands.
exact	**boolean**	yes	When true, will only match if the path matches the **location.pathname** exactly.

7.5.1.43. console.perspective

7.5.1.43.1. Summary

(not available)

7.5.1.43.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	The perspective identifier.
name	**string**	no	The perspective display name.
icon	**CodeRef<LazyComponent>**	no	The perspective display icon.
landingPageURL	**CodeRef<(flags: { [key: string]: boolean; }, isFirstVisit: boolean) ⇒ string>**	no	The function to get perspective landing page URL.
importRedirectURL	**CodeRef<(namespace: string) ⇒ string>**	no	The function to get redirect URL for import flow.
default	**boolean**	yes	Whether the perspective is the default. There can only be one default.
defaultPins	**ExtensionK8sModel[ ]**	yes	Default pinned resources on the nav
usePerspectiveDetection	**CodeRef<() ⇒ [boolean, boolean]>**	yes	The hook to detect default perspective

7.5.1.44. console.project-overview/inventory-item

7.5.1.44.1. Summary

Adds a new inventory item into the **Project Overview** page.

7.5.1.44.2. Properties

Name	Value Type	Optional	Description

Name	Value Type	Optional	Description
component	**CodeRef<React.ComponentType<{ projectName: string; }>>**	no	The component to be rendered.

7.5.1.45. console.project-overview/utilization-item

7.5.1.45.1. Summary

Adds a new project overview utilization item.

7.5.1.45.2. Properties

Name	Value Type	Optional	Description
title	**string**	no	The title of the utilization item.
getUtilizationQuery	**CodeRef<GetProjectQuery>**	no	Prometheus utilization query.
humanize	**CodeRef<Humanize>**	no	Convert Prometheus data to human-readable form.
getTotalQuery	**CodeRef<GetProjectQuery>**	yes	Prometheus total query.
getRequestQuery	**CodeRef<GetProjectQuery>**	yes	Prometheus request query.
getLimitQuery	**CodeRef<GetProjectQuery>**	yes	Prometheus limit query.
TopConsumerPopover	**CodeRef<React.ComponentType<TopConsumerPopoverProps>>**	yes	Shows the top consumer popover instead of plain value.

7.5.1.46. console.pvc/alert

7.5.1.46.1. Summary

(not available)

7.5.1.46.2. Properties

Name	Value Type	Optional	Description
alert	**CodeRef<React.ComponentType<{ pvc: K8sResourceCommon; }>>**	no	The alert component.

7.5.1.47. **console.pvc/create-prop**

7.5.1.47.1. Summary

(not available)

7.5.1.47.2. Properties

Name	Value Type	Optional	Description
label	**string**	no	Label for the create prop action.
path	**string**	no	Path for the create prop action.

7.5.1.48. **console.pvc/delete**

7.5.1.48.1. Summary

(not available)

7.5.1.48.2. Properties

Name	Value Type	Optional	Description
predicate	**CodeRef<(pvc: K8sResourceCommon) ⇒ boolean>**	no	Predicate that tells whether to use the extension or not.
onPVCKill	**CodeRef<(pvc: K8sResourceCommon) ⇒ Promise<void>>**	no	Method for the PVC delete operation.
alert	**CodeRef<React.ComponentType<{ pvc: K8sResourceCommon; }>>**	no	Alert component to show additional information.

7.5.1.49. **console.pvc/status**

7.5.1.49.1. Summary

(not available)

7.5.1.49.2. Properties

Name	Value Type	Optional	Description
priority	**number**	no	Priority for the status component. A larger value means higher priority.
status	**CodeRef<React.ComponentType<{ pvc: K8sResourceCommon; }>>**	no	The status component.
predicate	**CodeRef<(pvc: K8sResourceCommon) ⇒ boolean>**	no	Predicate that tells whether to render the status component or not.

7.5.1.50. **console.redux-reducer**

7.5.1.50.1. Summary

Adds new reducer to Console Redux store which operates on **plugins.<scope>** substate.

7.5.1.50.2. Properties

Name	Value Type	Optional	Description
scope	**string**	no	The key to represent the reducer-managed substate within the Redux state object.
reducer	**CodeRef<Reducer<any, AnyAction>>**	no	The reducer function, operating on the reducer-managed substate.

7.5.1.51. **console.resource/create**

7.5.1.51.1. Summary

(not available)

7.5.1.51.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sModel**	no	The model for which this create resource page will be rendered.
component	**CodeRef<React.ComponentType<CreateResourceComponentProps>>**	no	The component to be rendered when the model matches

7.5.1.52. console.storage-provider

7.5.1.52.1. Summary

(not available)

7.5.1.52.2. Properties

Name	Value Type	Optional	Description
name	**string**	no	
Component	**CodeRef<React.ComponentType<Partial<RouteComponentProps<{}, StaticContext, any>>>>**	no	

7.5.1.53. console.tab/horizontalNav

7.5.1.53.1. Summary

(not available)

7.5.1.53.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sKindVersionModel**	no	The model for which this provider show tab.

Name	Value Type	Optional	Description
page	**{ name: string; href: string; }**	no	The page to be show in horizontal tab. It takes tab name as name and href of the tab
component	**CodeRef<React.ComponentType<PageComponentProps<K8sResourceCommon>>>**	no	The component to be rendered when the route matches.

7.5.1.54. **console.telemetry/listener**

7.5.1.54.1. Summary

(not available)

7.5.1.54.2. Properties

Name	Value Type	Optional	Description
listener	**CodeRef<TelemetryEventListener>**	no	Listen for telemetry events

7.5.1.55. **console.topology/adapter/build**

7.5.1.55.1. Summary

BuildAdapter contributes an adapter to adapt element to data that can be used by the **Build** component.

7.5.1.55.2. Properties

Name	Value Type	Optional	Description
adapt	`CodeRef<(element: GraphElement) ⇒ AdapterDataType<BuildConfigData>	undefined>`	no

7.5.1.56. **console.topology/adapter/network**

7.5.1.56.1. Summary

NetworkAdapater contributes an adapter to adapt element to data that can be used by the **Networking** component.

7.5.1.56.2. Properties

Name	Value Type	Optional	Description
adapt	`CodeRef<(element: GraphElement) ⇒ NetworkAdapterType	undefined>`	no	

7.5.1.57. **console.topology/adapter/pod**

7.5.1.57.1. Summary

PodAdapter contributes an adapter to adapt element to data that can be used by the **Pod** component.

7.5.1.57.2. Properties

Name	Value Type	Optional	Description
adapt	`CodeRef<(element: GraphElement) ⇒ AdapterDataType<Pods AdapterDataType>	undefined>`	no	

7.5.1.58. **console.topology/component/factory**

7.5.1.58.1. Summary

Getter for a **ViewComponentFactory**.

7.5.1.58.2. Properties

Name	Value Type	Optional	Description
getFactory	**CodeRef<ViewComponentFactory>**	no	Getter for a **ViewComponentFactory**.

7.5.1.59. **console.topology/create/connector**

7.5.1.59.1. Summary

Getter for the create connector function.

7.5.1.59.2. Properties

Name	Value Type	Optional	Description
getCreateConnector	**CodeRef<CreateConnectionGetter>**	no	Getter for the create connector function.

7.5.1.60. **console.topology/data/factory**

7.5.1.60.1. Summary

Topology Data Model Factory Extension

7.5.1.60.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	Unique ID for the factory.
priority	**number**	no	Priority for the factory
resources	**WatchK8sResourcesGeneric**	yes	Resources to be fetched from useK8sWatchResources hook.
workloadKeys	**string[]**	yes	Keys in resources containing workloads.
getDataModel	**CodeRef<TopologyDataModelGetter>**	yes	Getter for the data model factory.
isResourceDepicted	**CodeRef<TopologyDataModelDepicted>**	yes	Getter for function to determine if a resource is depicted by this model factory.
getDataModelReconciler	**CodeRef<TopologyDataModelReconciler>**	yes	Getter for function to reconcile data model after all extensions' models have loaded.

7.5.1.61. **console.topology/decorator/provider**

7.5.1.61.1. Summary

Topology Decorator Provider Extension

7.5.1.61.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	
priority	**number**	no	
quadrant	**TopologyQuadrant**	no	
decorator	**CodeRef<TopologyDecoratorGetter>**	no	

7.5.1.62. **console.topology/details/resource-alert**

7.5.1.62.1. Summary

DetailsResourceAlert contributes an alert for specific topology context or graph element.

7.5.1.62.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	The ID of this alert. Used to save state if the alert should not be shown after dismissed.
contentProvider	`CodeRef<(element: GraphElement) ⇒ DetailsResourceAlertContent	null>`	no

7.5.1.63. **console.topology/details/resource-link**

7.5.1.63.1. Summary

DetailsResourceLink contributes a link for specific topology context or graph element.

7.5.1.63.2. Properties

Name	Value Type	Optional	Description
link	`CodeRef<(element: GraphElement) ⇒ React.Component	undefined>`	no

Name	Value Type	Optional	Description
Return the resource link if provided, otherwise undefined. Use the **ResourceIcon** and **ResourceLink** properties for styles.	**priority**	**number**	yes

7.5.1.64. console.topology/details/tab

7.5.1.64.1. Summary

DetailsTab contributes a tab for the topology details panel.

7.5.1.64.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this details tab.
label	**string**	no	The tab label to display in the UI.
insertBefore	**string** | **string[]**	yes	Insert this item before the item referenced here. For arrays, the first one found in order is used.
insertAfter	**string** | **string[]**	yes	Insert this item after the item referenced here. For arrays, the first one found in order is used. The **insertBefore** value takes precedence.

7.5.1.65. console.topology/details/tab-section

7.5.1.65.1. Summary

DetailsTabSection contributes a section for a specific tab in the topology details panel.

7.5.1.65.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	A unique identifier for this details tab section.
tab	**string**	no	The parent tab ID that this section should contribute to.
provider	**CodeRef<DetailsTabSectionExtensionHook>**	no	A hook that returns a component, or if null or undefined renders in the topology sidebar.SDK component: <Section title=\{}>... padded area
section	`CodeRef<(element: GraphElement, renderNull?: () ⇒ null) ⇒ React.Component	undefined>`	no
@deprecated Fallback if no provider is defined. renderNull is a no-op already.	**insertBefore**	**string | string[]**	yes
Insert this item before the item referenced here.For arrays, the first one found in order is used.	**insertAfter**	**string | string[]**	yes

7.5.1.66. console.topology/display/filters

7.5.1.66.1. Summary

Topology Display Filters Extension

7.5.1.66.2. Properties

Name	Value Type	Optional	Description
getTopologyFilters	**CodeRef<() ⇒ TopologyDisplayOption[]>**	no	
applyDisplayOptions	**CodeRef<TopologyApplyDisplayOptions>**	no	

7.5.1.67. console.topology/relationship/provider

7.5.1.67.1. Summary

Topology relationship provider connector extension

7.5.1.67.2. Properties

Name	Value Type	Optional	Description
provides	**CodeRef<RelationshipProviderProvides>**	no	
tooltip	**string**	no	
create	**CodeRef<RelationshipProviderCreate>**	no	
priority	**number**	no	

7.5.1.68. console.user-preference/group

7.5.1.68.1. Summary

(not available)

7.5.1.68.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	ID used to identify the user preference group.
label	**string**	no	The label of the user preference group
insertBefore	**string**	yes	ID of user preference group before which this group should be placed
insertAfter	**string**	yes	ID of user preference group after which this group should be placed

7.5.1.69. console.user-preference/item

7.5.1.69.1. Summary

(not available)

7.5.1.69.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	ID used to identify the user preference item and referenced in insertAfter and insertBefore to define the item order.
label	**string**	no	The label of the user preference
description	**string**	no	The description of the user preference.
field	**UserPreferenceField**	no	The input field options used to render the values to set the user preference.
groupId	**string**	yes	IDs used to identify the user preference groups the item would belong to.
insertBefore	**string**	yes	ID of user preference item before which this item should be placed
insertAfter	**string**	yes	ID of user preference item after which this item should be placed

7.5.1.70. **console.yaml-template**

7.5.1.70.1. Summary

YAML templates for editing resources via the yaml editor.

7.5.1.70.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sModel**	no	Model associated with the template.

Name	Value Type	Optional	Description
template	**CodeRef<string>**	no	The YAML template.
name	**string**	no	The name of the template. Use the name **default** to mark this as the default template.

7.5.1.71. dev-console.add/action

7.5.1.71.1. Summary

(not available)

7.5.1.71.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	ID used to identify the action.
label	**string**	no	The label of the action
description	**string**	no	The description of the action.
href	**string**	no	The href to navigate to.
groupId	**string**	yes	IDs used to identify the action groups the action would belong to.
icon	**CodeRef<React.ReactNode>**	yes	The perspective display icon.
accessReview	**AccessReviewResourceAttributes[]**	yes	Optional access review to control the visibility or enablement of the action.

7.5.1.72. dev-console.add/action-group

7.5.1.72.1. Summary

(not available)

7.5.1.72.2. Properties

Name	Value Type	Optional	Description
id	**string**	no	ID used to identify the action group.
name	**string**	no	The title of the action group
insertBefore	**string**	yes	ID of action group before which this group should be placed
insertAfter	**string**	yes	ID of action group after which this group should be placed

7.5.1.73. **dev-console.import/environment**

7.5.1.73.1. Summary

(not available)

7.5.1.73.2. Properties

Name	Value Type	Optional	Description
imageStreamName	**string**	no	Name of the image stream to provide custom environment variables for
imageStreamTags	**string[]**	no	List of supported image stream tags
environments	**ImageEnvironment[]**	no	List of environment variables

7.5.1.74. **console.page/resource/tab**

7.5.1.74.1. Summary [DEPRECATED]

Deprecated. Use **console.tab/horizontalNav** instead. Adds a new resource tab page to Console router.

7.5.1.74.2. Properties

Name	Value Type	Optional	Description
model	**ExtensionK8sGroupKindModel**	no	The model for which this resource page links to.
component	**CodeRef<React.ComponentType<RouteComponentProps<{}, StaticContext, any>>>**	no	The component to be rendered when the route matches.
name	**string**	no	The name of the tab.
href	**string**	yes	The optional href for the tab link. If not provided, the first **path** is used.
exact	**boolean**	yes	When true, will only match if the path matches the **location.pathname** exactly.

7.5.2. Adding a tab to the pods page

The following procedure adds a tab to the **Pod Details** page as an example extension to your plug-in.

Procedure

1. Add the following to the **console-extensions.json** file:

```
{
  "type": "console.tab/horizontalNav",
  "properties": {
    "page": {
      "name": "Example Tab",
      "href": "example"
    },
    "model": {
      "group": "core",
      "version": "v1",
      "kind": "Pod"
    },
    "component": { "$codeRef": "ExampleTab" }
  }
}
```

2. Edit the **package.json** file to include the following changes:

```
        "exposedModules": {
            "ExamplePage": "./components/ExamplePage",
            "ExampleTab": "./components/ExampleTab"
        }
```

3. Write a message to display on a new custom tab on the **Pods** page by creating a new file **src/components/ExampleTab.tsx** and adding the following script:

```
import * as React from 'react';

export default function ExampleTab() {
    return (
        <p>This is a custom tab added to a resource using a dynamic plug-in.</p>
    );
}
```

Verification

- Visit a **Pod** page to view the added tab.

7.6. BUILD AN IMAGE WITH DOCKER

To deploy your plug-in on a cluster, you need to build an image and push it to an image registry.

Procedure

1. Build the image with the following command:

```
$ docker build -t quay.io/my-repositroy/my-plugin:latest .
```

2. Optional: If you want to test your image, run the following command:

```
$ docker run -it --rm -d -p 9001:80 quay.io/my-repository/my-plugin:latest
```

3. Push the image by running the following command:

```
$ docker push quay.io/my-repository/my-plugin:latest
```

7.7. DEPLOY YOUR PLUG-IN ON A CLUSTER

After pushing an image with your changes to a registry, you can deploy the plug-in to a cluster.

Procedure

1. To deploy your plug-in to a cluster, instantiate your plug-in by running the following command:

```
$ oc process -f template.yaml \
  -p PLUGIN_NAME=my-plugin \ 1
  -p NAMESPACE=my-plugin-namespace \ 2
  -p IMAGE=quay.io/my-repository/my-plugin:latest \ 3
  | oc create -f -
```

1 Update with the name of your plug-in.

2 Update with the namespace.

3 Update with the name of the image you created.

This command runs a light-weight NGINX HTTP server to serve the assets for your plug-in.

IMPORTANT

PLUGIN_NAME must match the plug-in name you used in the **consolePlugin** declaration of **package.json**.

2. Patch the **Console Operator** configuration to enable the plug-in by running the following command:

```
$ oc patch consoles.operator.openshift.io cluster --patch '{ "spec": { "plugins": ["my-plugin"] } }' --type=merge
```

7.8. DISABLING YOUR PLUG-IN IN THE BROWSER

Console users can use the **disable-plugins** query parameter to disable specific or all dynamic plug-ins that would normally get loaded at run-time.

Procedure

- To disable a specific plug-in(s), remove the plug-in you want to disable from the comma-separated list of plug-in names.
- To disable all plug-ins, leave an empty string in the **disable-plugins** query parameter.

NOTE

Cluster administrators can disable plug-ins in the **Cluster Settings** page of the web console

CHAPTER 8. ABOUT THE WEB TERMINAL IN THE WEB CONSOLE

You can launch an embedded command line terminal instance in the web console. You must first install the Web Terminal Operator to use the web terminal.

> **NOTE**
>
> Cluster administrators can access the web terminal in OpenShift Container Platform 4.7 and later.

This terminal instance is preinstalled with common CLI tools for interacting with the cluster, such as **oc**, **kubectl**,**odo**, **kn**, **tkn**, **helm**, **kubens**, **subctl**, and **kubectx**. It also has the context of the project you are working on and automatically logs you in using your credentials.

8.1. INSTALLING THE WEB TERMINAL

You can install the web terminal using the Web Terminal Operator listed in the OpenShift Container Platform OperatorHub. When you install the Web Terminal Operator, the custom resource definitions (CRDs) that are required for the command line configuration, such as the **DevWorkspace** CRD, are automatically installed. The web console creates the required resources when you open the web terminal.

Prerequisites

- Access to an OpenShift Container Platform cluster using an account with **cluster-admin** permissions.

Procedure

1. In the **Administrator** perspective of the web console, navigate to **Operators → OperatorHub**.
2. Use the **Filter by keyword** box to search for the **Web Terminal** Operator in the catalog, and then click the **Web Terminal** tile.
3. Read the brief description about the Operator on the **Web Terminal** page, and then click **Install**.
4. On the **Install Operator** page, retain the default values for all fields.
   - The **fast** option in the **Update Channel** menu enables installation of the latest release of the Web Terminal Operator.
   - The **All namespaces on the cluster**option in the **Installation Mode** menu enables the Operator to watch and be available to all namespaces in the cluster.
   - The **openshift-operators** option in the **Installed Namespace** menu installs the Operator in the default **openshift-operators** namespace.
   - The **Automatic** option in the **Approval Strategy** menu ensures that the future upgrades to the Operator are handled automatically by the Operator Lifecycle Manager.
5. Click **Install**.

6. In the **Installed Operators** page, click the **View Operator** to verify that the Operator is listed on the **Installed Operators** page.

   NOTE

   Prior to OpenShift Container Platform 4.8, the Web Terminal Operator bundled all its functionality in a single Operator. As of OpenShift Container Platform 4.8, the Web Terminal Operator installs the DevWorkspace Operator as a dependency to provide the same features.

7. After the Operator is installed, refresh your page to see the command line terminal icon on the upper right of the console.

8.2. USING THE WEB TERMINAL

After the Web Terminal Operator is installed, you can use the web terminal as follows:

1. To launch the web terminal, click the command line terminal icon (>_) on the upper right of the console. A web terminal instance is displayed in the **Command line terminal** pane. This instance is automatically logged in with your credentials.

2. Select the project where the **DevWorkspace** CR must be created from the **Project** drop-down list. By default, the current project is selected.

   NOTE

   - The **DevWorkspace** CR is created only if it does not already exist.
   - The **openshift-terminal** project is the default project used for cluster administrators. They do not have the option to choose another project.

3. Click **Start** to initialize the web terminal using the selected project.
   After the web terminal is initialized, you can use the preinstalled CLI tools like **oc**, **kubectl**, **odo**, **kn**, **tkn**, **helm**, **kubens**, **subctl**, and **kubectx** in the web terminal.

4. Click **+** to open multiple tabs within web terminal in the console.

   NOTE

   - You can re-run commands by selecting them from the list of commands you have run in the terminal. These commands persist across multiple terminal sessions.
   - The web terminal remains open until you close it or you close the browser window or tab.

8.3. UNINSTALLING THE WEB TERMINAL

Uninstalling the web terminal is a two-step process:

1. Uninstall the Web Terminal Operator and related custom resources (CRs) that were added when you installed the Operator.

2. Uninstall the DevWorkspace Operator and its related custom resources that were added as a dependency of the Web Terminal Operator.

Uninstalling the Web Terminal Operator does not remove any of its custom resource definitions (CRDs) or managed resources that are created when the Operator is installed. These components must be manually uninstalled for security purposes. Removing these components also allows you to save cluster resources by ensuring that terminals do not idle when the Operator is uninstalled.

Prerequisites

- Access to an OpenShift Container Platform cluster using an account with **cluster-admin** permissions.

8.3.1. Removing the Web Terminal Operator and the custom resources that support it

Use the console and the CLI to delete any existing web terminals and CRs that were created during the installation of the Web Terminal Operator.

> **NOTE**
>
> Prior to OpenShift Container Platform 4.8, the Web Terminal Operator used different CRDs to provide Web Terminal capabilities. To uninstall versions 1.2.1 and below of the Web Terminal Operator, refer to the documentation for OpenShift Container Platform 4.7.

Procedure

1. Uninstall the Web Terminal Operator using the web console:

   a. In the **Administrator** perspective of the web console, navigate to **Operators → Installed Operators**.

   b. Scroll the filter list or type a keyword into the **Filter by name** box to find the **Web Terminal** Operator.

   c. Click the Options menu ⋮ for the Web Terminal Operator, and then select **Uninstall Operator**.

   d. In the **Uninstall Operator** confirmation dialog box, click **Uninstall** to remove the Operator, Operator deployments, and pods from the cluster. The Operator stops running and no longer receives updates.

2. Remove the CRs used by the Operator.

```
$ oc delete devworkspaces.workspace.devfile.io --all-namespaces \
    --selector 'console.openshift.io/terminal=true' --wait
```

```
$ oc delete devworkspacetemplates.workspace.devfile.io --all-namespaces \
    --selector 'console.openshift.io/terminal=true' --wait
```

8.3.2. Deleting the DevWorkspace Operator dependency

Use the CLI to delete the custom resource definitions (CRDs) and additional resources that are created during installation of the Web Terminal Operator.

IMPORTANT

The DevWorkspace Operator functions as a standalone Operator and may be required as a dependency for other Operators installed on the cluster (for example, the Red Hat OpenShift Dev Spaces Operator may depend on it). Follow the steps below only if you are sure the DevWorkspace Operator is no longer needed.

Procedure

1. Remove the **DevWorkspace** custom resources used by the Operator, along with any related Kubernetes objects, such as deployments.

   ```
   $ oc delete devworkspaces.workspace.devfile.io --all-namespaces --all --wait
   ```

   ```
   $ oc delete devworkspaceroutings.controller.devfile.io --all-namespaces --all --wait
   ```

   WARNING

   If this step is not complete, finalizers make it difficult to fully uninstall the Operator easily.

2. Remove the CRDs used by the Operator:

   WARNING

   The DevWorkspace Operator provides custom resource definitions (CRDs) that use conversion webhooks. Failing to remove these CRDs can cause issues on the cluster.

   ```
   $ oc delete customresourcedefinitions.apiextensions.k8s.io
   devworkspaceroutings.controller.devfile.io
   ```

   ```
   $ oc delete customresourcedefinitions.apiextensions.k8s.io
   devworkspaces.workspace.devfile.io
   ```

   ```
   $ oc delete customresourcedefinitions.apiextensions.k8s.io
   devworkspacetemplates.workspace.devfile.io
   ```

```
$ oc delete customresourcedefinitions.apiextensions.k8s.io
devworkspaceoperatorconfigs.controller.devfile.io
```

3. Verify that all involved custom resource definitions are removed. The following command should not display any result.

```
$ oc get customresourcedefinitions.apiextensions.k8s.io | grep "devfile.io"
```

4. Remove the **devworkspace-webhook-server** deployment, mutating, and validating webhooks:

```
$ oc delete deployment/devworkspace-webhook-server -n openshift-operators
```

```
$ oc delete mutatingwebhookconfigurations controller.devfile.io
```

```
$ oc delete validatingwebhookconfigurations controller.devfile.io
```

NOTE

If you remove the **devworkspace-webhook-server** deployment without removing the mutating and validating webhooks, you will not be able to use **oc exec** commands to run commands in a container on the cluster. After you remove the webhooks you will be able to use the **oc exec** commands again.

5. Remove any remaining services, secrets, and config maps. Depending on the installation, some resources included in the following command may not exist on the cluster.

```
$ oc delete all --selector app.kubernetes.io/part-of=devworkspace-
operator,app.kubernetes.io/name=devworkspace-webhook-server -n openshift-operators
```

```
$ oc delete serviceaccounts devworkspace-webhook-server -n openshift-operators
```

```
$ oc delete configmap devworkspace-controller -n openshift-operators
```

```
$ oc delete clusterrole devworkspace-webhook-server
```

```
$ oc delete clusterrolebinding devworkspace-webhook-server
```

6. Uninstall the Operator using the web console:

    a. In the **Administrator** perspective of the web console, navigate to **Operators → Installed Operators**.

    b. Scroll the filter list or type a keyword into the **Filter by name** box to find the **DevWorkspace** Operator.

    c. Click the Options menu ⋮ for the DevWorkspace Operator, and then select **Uninstall Operator**.

d. In the **Uninstall Operator** confirmation dialog box, click **Uninstall** to remove the Operator, Operator deployments, and pods from the cluster. The Operator stops running and no longer receives updates.

CHAPTER 9. DISABLING THE WEB CONSOLE IN OPENSHIFT CONTAINER PLATFORM

You can disable the OpenShift Container Platform web console.

9.1. PREREQUISITES

- Deploy an OpenShift Container Platform cluster.

9.2. DISABLING THE WEB CONSOLE

You can disable the web console by editing the **consoles.operator.openshift.io** resource.

- Edit the **consoles.operator.openshift.io** resource:

  ```
  $ oc edit consoles.operator.openshift.io cluster
  ```

  The following example displays the parameters from this resource that you can modify:

  ```
  apiVersion: operator.openshift.io/v1
  kind: Console
  metadata:
    name: cluster
  spec:
    managementState: Removed 1
  ```

  1 Set the **managementState** parameter value to **Removed** to disable the web console. The other valid values for this parameter are **Managed**, which enables the console under the cluster's control, and **Unmanaged**, which means that you are taking control of web console management.

CHAPTER 10. CREATING QUICK START TUTORIALS IN THE WEB CONSOLE

If you are creating quick start tutorials for the OpenShift Container Platform web console, follow these guidelines to maintain a consistent user experience across all quick starts.

10.1. UNDERSTANDING QUICK STARTS

A quick start is a guided tutorial with user tasks. In the web console, you can access quick starts under the **Help** menu. They are especially useful for getting oriented with an application, Operator, or other product offering.

A quick start primarily consists of tasks and steps. Each task has multiple steps, and each quick start has multiple tasks. For example:

- Task 1
  - Step 1
  - Step 2
  - Step 3
- Task 2
  - Step 1
  - Step 2
  - Step 3
- Task 3
  - Step 1
  - Step 2
  - Step 3

10.2. QUICK START USER WORKFLOW

When you interact with an existing quick start tutorial, this is the expected workflow experience:

1. In the **Administrator** or **Developer** perspective, click the **Help icon** and select **Quick Starts**.
2. Click a quick start card.
3. In the panel that appears, click **Start**.
4. Complete the on-screen instructions, then click **Next**.
5. In the **Check your work** module that appears, answer the question to confirm that you successfully completed the task.
   a. If you select **Yes**, click **Next** to continue to the next task.

   b. If you select **No**, repeat the task instructions and check your work again.

6. Repeat steps 1 through 6 above to complete the remaining tasks in the quick start.

7. After completing the final task, click **Close** to close the quick start.

10.3. QUICK START COMPONENTS

A quick start consists of the following sections:

- **Card**: The catalog tile that provides the basic information of the quick start, including title, description, time commitment, and completion status
- **Introduction**: A brief overview of the goal and tasks of the quick start
- **Task headings**: Hyper-linked titles for each task in the quick start
- **Check your work module**: A module for a user to confirm that they completed a task successfully before advancing to the next task in the quick start
- **Hints**: An animation to help users identify specific areas of the product
- **Buttons**
  - **Next and back buttons** Buttons for navigating the steps and modules within each task of a quick start
  - **Final screen buttons**: Buttons for closing the quick start, going back to previous tasks within the quick start, and viewing all quick starts

The main content area of a quick start includes the following sections:

- **Card copy**
- **Introduction**
- **Task steps**
- **Modals and in-app messaging**
- **Check your work module**

10.4. CONTRIBUTING QUICK STARTS

OpenShift Container Platform introduces the quick start custom resource, which is defined by a **ConsoleQuickStart** object. Operators and administrators can use this resource to contribute quick starts to the cluster.

Prerequisites

- You must have cluster administrator privileges.

Procedure

1. To create a new quick start, run:

```
$ oc get -o yaml consolequickstart spring-with-s2i > my-quick-start.yaml
```

2. Run:

```
$ oc create -f my-quick-start.yaml
```

3. Update the YAML file using the guidance outlined in this documentation.

4. Save your edits.

10.4.1. Viewing the quick start API documentation

Procedure

- To see the quick start API documentation, run:

```
$ oc explain consolequickstarts
```

Run **oc explain -h** for more information about **oc explain** usage.

10.4.2. Mapping the elements in the quick start to the quick start CR

This section helps you visually map parts of the quick start custom resource (CR) with where they appear in the quick start within the web console.

10.4.2.1. conclusion element

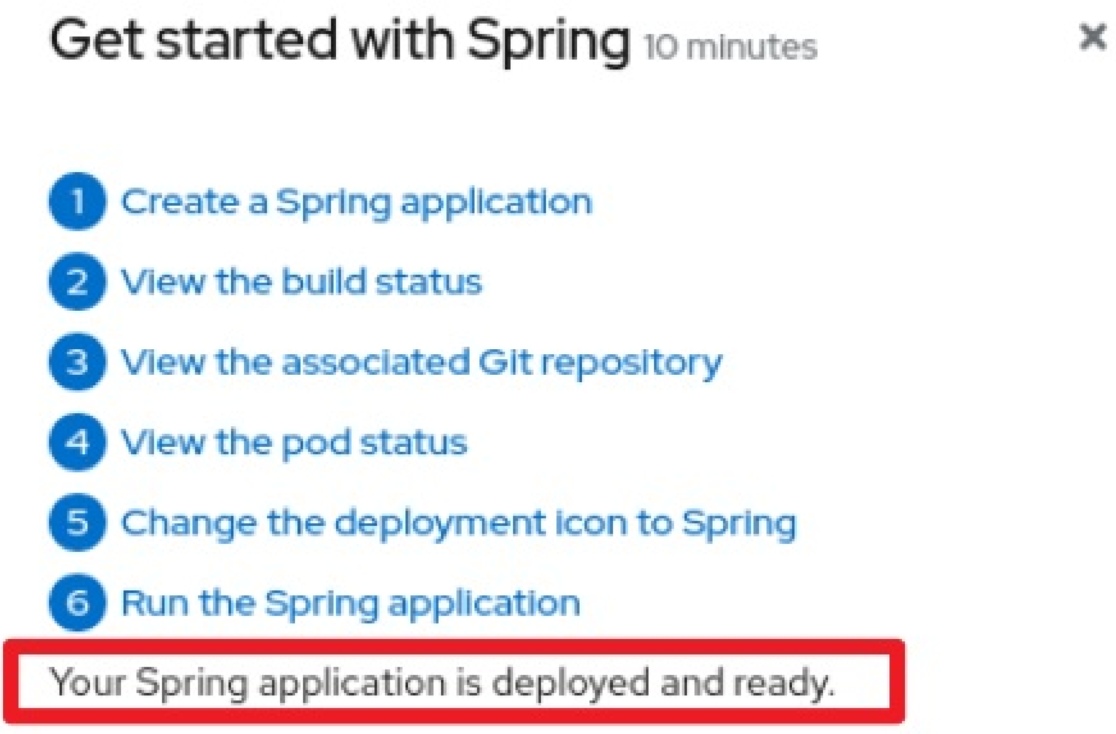
Viewing the conclusion element in the YAML file

```
...
summary:
  failed: Try the steps again.
  success: Your Spring application is running.
title: Run the Spring application
conclusion: >-
  Your Spring application is deployed and ready. 1
```

1 conclusion text

Viewing the conclusion element in the web console

The conclusion appears in the last section of the quick start.



Get started with Spring 10 minutes

1 Create a Spring application

2 View the build status

3 View the associated Git repository

4 View the pod status

5 Change the deployment icon to Spring

6 Run the Spring application

Your Spring application is deployed and ready.

10.4.2.2. description element

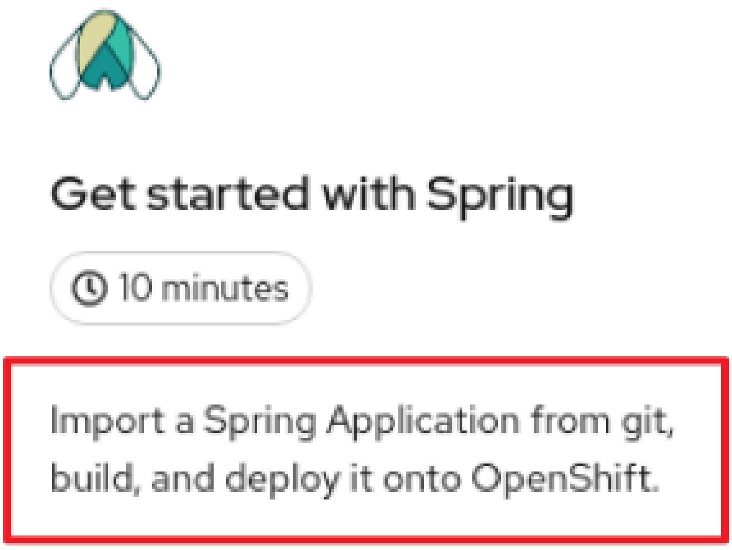
Viewing the description element in the YAML file

```
apiVersion: console.openshift.io/v1
kind: ConsoleQuickStart
metadata:
  name: spring-with-s2i
spec:
  description: 'Import a Spring Application from git, build, and deploy it onto OpenShift.' (1)
...
```

(1) description text

Viewing the description element in the web console

The description appears on the introductory tile of the quick start on the **Quick Starts** page.



Get started with Spring

10 minutes

Import a Spring Application from git, build, and deploy it onto OpenShift.

10.4.2.3. displayName element

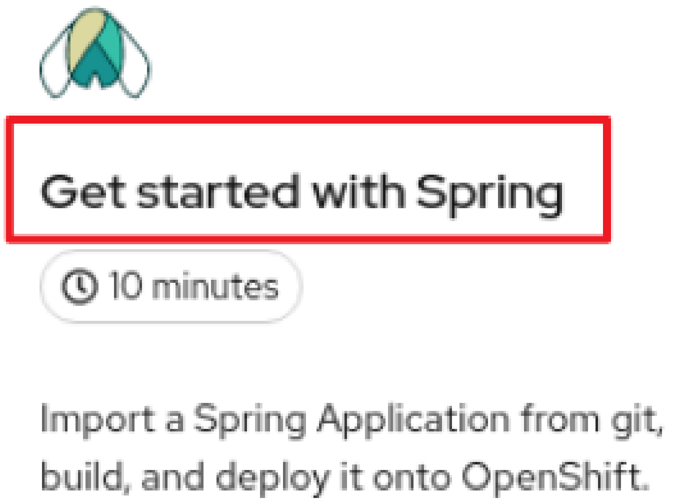
Viewing the displayName element in the YAML file

```
apiVersion: console.openshift.io/v1
kind: ConsoleQuickStart
metadata:
  name: spring-with-s2i
spec:
  description: 'Import a Spring Application from git, build, and deploy it onto OpenShift.'
  displayName: Get started with Spring 1
  durationMinutes: 10
```

1 **displayName** text.

Viewing the displayName element in the web console

The display name appears on the introductory tile of the quick start on the **Quick Starts** page.



Get started with Spring

10 minutes

Import a Spring Application from git, build, and deploy it onto OpenShift.

10.4.2.4. durationMinutes element

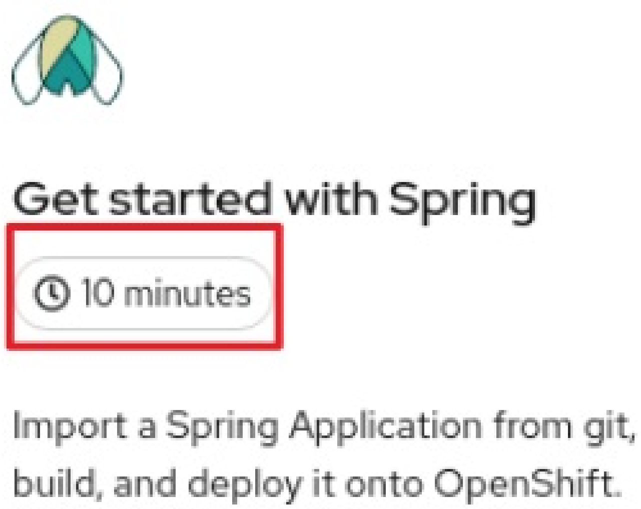
Viewing the durationMinutes element in the YAML file

```
apiVersion: console.openshift.io/v1
kind: ConsoleQuickStart
metadata:
  name: spring-with-s2i
spec:
  description: 'Import a Spring Application from git, build, and deploy it onto OpenShift.'
  displayName: Get started with Spring
  durationMinutes: 10 (1)
```

1. **durationMinutes** value, in minutes. This value defines how long the quick start should take to complete.

Viewing the durationMinutes element in the web console

The duration minutes element appears on the introductory tile of the quick start on the **Quick Starts** page.



Get started with Spring

10 minutes

Import a Spring Application from git, build, and deploy it onto OpenShift.

10.4.2.5. icon element

Viewing the icon element in the YAML file

```
...
spec:
  description: 'Import a Spring Application from git, build, and deploy it onto OpenShift.'
  displayName: Get started with Spring
  durationMinutes: 10
  icon: >-   1

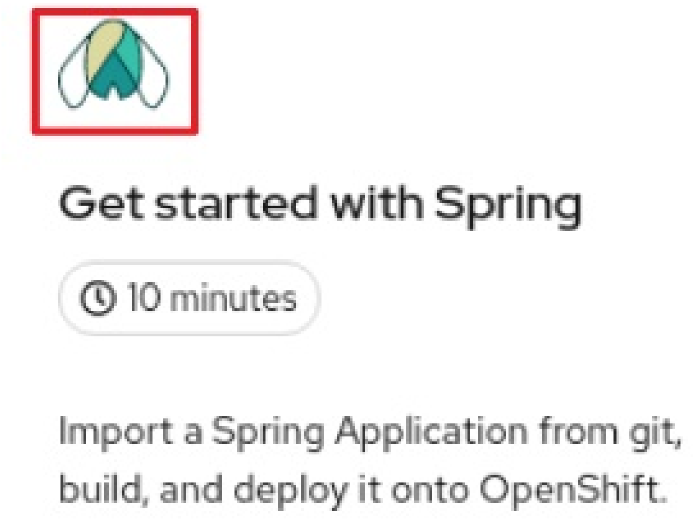
data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdmciIGlkPS
JMYXllcl8xIiBkYXRhLW5hbWU9IkxheWVyIDEiIHZpZXdCb3g9IjAgMCAxMDI0IDEwMjQiPjxkZWZzPjxzd
HlsZT4uY2xzLTF7ZmlsbDojMTUzZDNjO30uY2xzLTJ7ZmlsbDojZDhkYTlkO30uY2xzLTN7ZmlsbDojNT
hjMGE4O30uY2xzLTR7ZmlsbDojZmZmO30uY2xzLTV7ZmlsbDojM2Q5MTkxO308L3N0eWxlPjwvZGV
mcz48dGl0bGU+c25vd2Ryb3BfaWNvbl9yZ2JfZGVmYXVsdDwvdGl0bGU+PHBhdGggY2xhc3M9ImNsc
y0xIiBkPSJNMTAxMi42OSw1OTNjLTExLjEyLTM4LjA3LTMxLTczLTU5LjIxLTEwMy44LTkuNS0xMS4zL
TIzLjIxLTI4LjI5LTM5LjA2LTQ3Ljk0QzgzMy41MywzNDEsNzQ1LjM3LDIzNC4xOCw2NzQsMTY4Ljk0Yy
01LTUuMjYtMTAuMjYtMTAuMzEtMTUuNjUtMTUuMDdhMjQ2LjQ5LDI0Ni40OSwwLDAsMC0zNi41NS
0yNi44LDE4Mi41LDE4Mi41LDAsMCwwLTIwLjMtMTEuNzcsMjAxLjUzLDIwMS41MywwLDAsMC00My4
xOS0xNUExNTUuMjQsMTU1LjI0LDAsMCwwLDUyOCw5NS4yYy02Ljc2LS42OC0xMS43NC0uODEtM
TQuMzktLjgxaDBsLTEuNjIsMC0xLjYyLDBhMTc3LjMsMTc3LjMsMCwwLDAtMzEuNzcsMy4zNSwyMDg
uMjMsMjA4LjIzLDAsMCwwLTU2LjEyLDE3LjU2LDE4MSwxODEsMCwwLDAtMjAuMjcsMTEuNzUsMjQ
3LjQzLDI0Ny40MywwLDAsMC0zNi41NywyNi44MUMzNjAuMjUsMTU4LjYyLDM1NSwxNjMuNjgsMzUw
LDE2OWMtNzEuMzUsNjUuMjUtMTU5LjUsMTcyLTI0MC4zOSwyNzIuMjhDOTMuNzMsNDYwLjg4LDg
wLDQ3Ny44Nyw3MC41Miw0ODkuMTcsNDIuMzUsNTIwLDIyLjQzLDU1NC45LDExLjMxLDU5MywuNz
IsNjI5LjIyLTEuNzMsNjY3LjY5LDQsNzA3LjMxLDE1LDc4Mi40OSw1NS43OCw4NTkuMTIsMTE4LjkzLD
kyMy4wOWEyMiwyMiwwLDAsMCwxNS41OSw2LjUyaDEuODNsMS44Ny0uMzJjODEuMDYtMTMuOT
EsMTEwLTc5LjU3LDE0My40OC0xNTUuNiwzLjkxLTguODgsNy45NS0xOC4wNSwxMi4yLTI3LjQzcTU
uNDIsOC41NCwxMS4zOSwxNi4yM2MzMS44NSw0MC45MSw3NS4xMiw2NC42NywxMzIuMzIsNzIuNj
NsMTguOCwyLjYyLDQuOTUtMTguMzNjMTMuMjYtNDkuMDcsMzUuMy05MC44NSw1MC42NC0xMT
YuMTksMTUuMzQsMjUuMzQsMzcuMzgsNjcuMTIsNTAuNjQsMTE2LjE5bDUsMTguMzMsMTguOC0yL
jYyYzU3LjItOCwxMDAuNDctMzEuNzIsMTMyLjMyLTcyLjYzcTYtNy42OCwxMS4zOS0xNi4yM2M0LjI1L
DkuMzgsOC4yOSwxOC41NSwxMi4yLDI3LjQzLDMzLjQ5LDc2LDYyLjQyLDE0MS42OSwxNDMuNDgs
MTU1LjZsMS44MS4zMWgxLjg5YTIyLDIyLDAsMCwwLDE1LjU5LTYuNTJjNjMuMTUtNjQsMTAzLjk1LT
E0MC42LDExNC44OS0yMTUuNzhDMTAyNS43Myw2NjcuNjksMTAyMy4yOCw2MjkuMjIsMTAxMi42O
Sw1OTNaIi8+PHBhdGggY2xhc3M9ImNscy0yIiBkPSJNMzY0LjE1LDE4NS4yM2MxNy44OS0xNi40LDM
```

```
0LjctMzAuMTUsNDkuNzctNDAuMTFhMjEyLDIxMiwwLDAsMSw2NS45My0yNS43M0ExOTgsMTk4LDA
sMCwxLDUxMiwxMTYuMjdhMTk2LjExLDE5Ni4xMSwwLDAsMSwzMiwzLjFjNC41LjkxLDkuMzYsMi4wN
wxNC41MywzLjUyLDYwLjQxLDIwLjQ4LDg0LjkyLDkxLjA1LTQ3LjQ0LDI0OC4wNi0yOC43NSwzNC4x
Mi0xNDAuNywxOTQuODQtMTg0LjY2LDI2OC40MmE2MzAuODYsNjMwLjg2LDAsMCwwLTMzLjIyLD
U4LjMyQzI3Niw2NTUuMzQsMjY1LjQsNTk4LDI2NS40LDUyMC4yOSwyNjUuNCwzNDAuNjEsMzExLjY
5LDI0MC43NCwzNjQuMTUsMTg1LjIzWiIvPjxwYXRoIGNsYXNzPSJjbHMtMyIgZD0iTTUyNy41NCwzO
DQuODNjODQuMDYtOTkuNywxMTYuMDYtMTc3LjI4LDk1LjIyLTIzMC43NCwxMS42Miw4LjY5LDI0LD
E5LjIsMzcuMDYsMzEuMTMsNTIuNDgsNTUuNSw5OC43OCwxNTUuMzgsOTguNzgsMzM1LjA3LDAs
NzcuNzEtMTAuNiwxMzUuMDUtMjcuNzcsMTc3LjRhNjI4LjczLDYyOC43MywwLDAsMC0zMy4yMy01OC
4zMmMtMzktNjUuMjYtMTMxLjQ1LTE5OS0xNzEuOTMtMjUyLjI3QzUyNi4zMywwODYuMjksNTI3LDM4
NS41Miw1MjcuNTQsMzg0LjgzWiIvPjxwYXRoIGNsYXNzPSJjbHMtNCIgZD0iTTEzNC41OCw5MDguM
DdoLS4wNmEuMzkuMzksMCwwLDEtLjI3LS4xMWMtMTE5LjUyLTEyMS4wNy0xNTUtMjg3LjQtNDcuN
TQtNDA0LjU4LDM0LjYzLTQxLjE0LDEyMC0xNTEuNiwyMDIuNzUtMjQyLjE5LTMuMTMsNy02LjEyLDE
0LjI1LTguOTIsMjEuNjktMjQuMzQsNjQuNDUtMzYuNjcsMTQ0LjMyLTM2LjY3LDIzNy40MSwwLDU2LjU
zLDUuNTgsMTA2LDE2LjU5LDE0Ny4xNEEzMDcuNDksMzA3LjQ5LDAsMCwwLDI4MC45MSw3MjND
MjM3LDgxNi44OCwyMTYuOTMsODkzLjkzLDEzNC41OCw5MDguMDdaIi8+PHBhdGggY2xhc3M9ImN
scy01IiBkPSJNNTgzLjQzLDgxMy43OUM1NjAuMTgsNzI3LjcyLDUxMiw2NjQuMTUsNTEyLDY2NC4xN
XMtNDguMTcsNjMuNTctNzEuNDMsMTQ5LjY0Yy00OC40NS02Ljc0LTEwMC45MS0yNy41Mi0xMzUu
NjYtOTEuMThhNjQ1LjY4LDY0NS42OCwwLDAsMSwzOS41Ny03MS41NGwuMjEtLjMyLjE5LS4zM2M2M
zOC02My42MywxMjYuNC0xOTEuMzcsMTY3LjEyLTI0NS42Niw0MC43MSw1NC4yOCwxMjkuMSwxO
DIsMTY3LjEyLDI0NS42NmwuMTkuMzMuMjEuMzJhNjQ1LjY4LDY0NS42OCwwLDAsMSwzOS41Nyw
3MS41NEM2ODQuMzQsNzg2LjI3LDYzMS44OCw4MDcuMDUsNTgzLjQzLDgxMy43OVoiLz48cGF0a
CBjbGFzcz0iY2xzLTQiIGQ9Ik04ODkuNzUsOTA4YS4zOS4zOSwwLDAsMS0uMjcuMTFoLS4wNkM4M
DcuMDcsODkzLjkzLDc4Nyw4MTYuODgsNzQzLjA5LDcyM2EzMDcuNDksMzA3LjQ5LDAsMCwwLDIwL
jQ1LTU1LjU0YzExLTQxLjExLDE2LjU5LTkwLjYxLDE2LjU5LTE0Ny4xNCwwLTkzLjA4LTEyLjMzLTE3M
y0zNi42Ni0yMzcuNHEtNC4yMi0xMS4xNi04LjkzLTIxLjdjODIuNzUsOTAuNTksMTY4LjEyLDIwMS4wNS
wyMDIuNzUsMjQyLjE5QzEwNDQuNzksNjIwLjU2LDEwMDkuMjcsNzg2Ljg5LDg4OS43NSw5MDhaIi8+
PC9zdmc+Cg==
...
```

1 The icon defined as a base64 value.

Viewing the icon element in the web console

The icon appears on the introductory tile of the quick start on the **Quick Starts** page.



Get started with Spring

10 minutes

Import a Spring Application from git, build, and deploy it onto OpenShift.

10.4.2.6. introduction element

Viewing the introduction element in the YAML file

```
...
  introduction: >- ①
    **Spring** is a Java framework for building applications based on a distributed microservices architecture.

    - Spring enables easy packaging and configuration of Spring applications into a self-contained executable application which can be easily deployed as a container to OpenShift.

    - Spring applications can integrate OpenShift capabilities to provide a natural "Spring on OpenShift" developer experience for both existing and net-new Spring applications. For example:

    - Externalized configuration using Kubernetes ConfigMaps and integration with Spring Cloud Kubernetes

    - Service discovery using Kubernetes Services

    - Load balancing with Replication Controllers

    - Kubernetes health probes and integration with Spring Actuator

    - Metrics: Prometheus, Grafana, and integration with Spring Cloud Sleuth

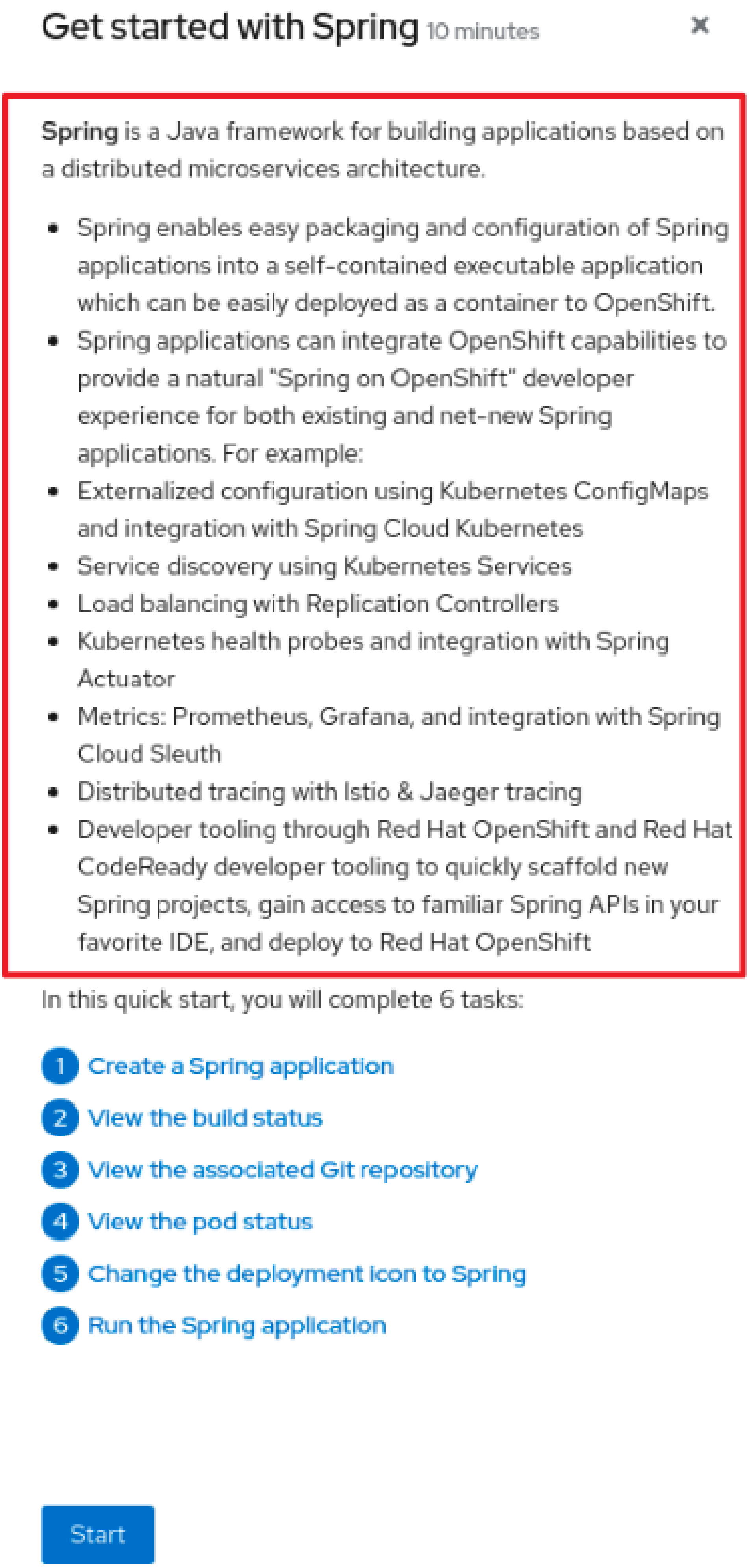
    - Distributed tracing with Istio & Jaeger tracing

    - Developer tooling through Red Hat OpenShift and Red Hat CodeReady developer tooling to quickly scaffold new Spring projects, gain access to familiar Spring APIs in your favorite IDE, and deploy to Red Hat OpenShift
...
```

① The introduction introduces the quick start and lists the tasks within it.

Viewing the introduction element in the web console

After clicking a quick start card, a side panel slides in that introduces the quick start and lists the tasks within it.



Get started with Spring 10 minutes

Spring is a Java framework for building applications based on a distributed microservices architecture.

- Spring enables easy packaging and configuration of Spring applications into a self-contained executable application which can be easily deployed as a container to OpenShift.
- Spring applications can integrate OpenShift capabilities to provide a natural "Spring on OpenShift" developer experience for both existing and net-new Spring applications. For example:
- Externalized configuration using Kubernetes ConfigMaps and integration with Spring Cloud Kubernetes
- Service discovery using Kubernetes Services
- Load balancing with Replication Controllers
- Kubernetes health probes and integration with Spring Actuator
- Metrics: Prometheus, Grafana, and integration with Spring Cloud Sleuth
- Distributed tracing with Istio & Jaeger tracing
- Developer tooling through Red Hat OpenShift and Red Hat CodeReady developer tooling to quickly scaffold new Spring projects, gain access to familiar Spring APIs in your favorite IDE, and deploy to Red Hat OpenShift

In this quick start, you will complete 6 tasks:

1. Create a Spring application
2. View the build status
3. View the associated Git repository
4. View the pod status
5. Change the deployment icon to Spring
6. Run the Spring application

10.4.3. Adding a custom icon to a quick start

A default icon is provided for all quick starts. You can provide your own custom icon.

Procedure

1. Find the **.svg** file that you want to use as your custom icon.
2. Use an online tool to convert the text to base64 .
3. In the YAML file, add **icon: >-**, then on the next line include **data:image/svg+xml;base64** followed by the output from the base64 conversion. For example:

```
icon: >-

data:image/svg+xml;base64,PHN2ZyB4bWxucz0iaHR0cDovL3d3dy53My5vcmcvMjAwMC9zdm
ciIHJvbGU9ImltZyIgdmlld.
```

10.4.4. Limiting access to a quick start

Not all quick starts should be available for everyone. The **accessReviewResources** section of the YAML file provides the ability to limit access to the quick start.

To only allow the user to access the quick start if they have the ability to create **HelmChartRepository** resources, use the following configuration:

```
accessReviewResources:
  - group: helm.openshift.io
    resource: helmchartrepositories
    verb: create
```

To only allow the user to access the quick start if they have the ability to list Operator groups and package manifests, thus ability to install Operators, use the following configuration:

```
accessReviewResources:
  - group: operators.coreos.com
    resource: operatorgroups
    verb: list
  - group: packages.operators.coreos.com
    resource: packagemanifests
    verb: list
```

10.4.5. Linking to other quick starts

Procedure

- In the **nextQuickStart** section of the YAML file, provide the **name**, not the **displayName**, of the quick start to which you want to link. For example:

```
nextQuickStart:
  - add-healthchecks
```

10.4.6. Supported tags for quick starts

Write your quick start content in markdown using these tags. The markdown is converted to HTML.

Tag	Description
'b',	Defines bold text.
'img',	Embeds an image.
'i',	Defines italic text.
'strike',	Defines strike-through text.
's',	Defines smaller text
'del',	Defines smaller text.
'em',	Defines emphasized text.
'strong',	Defines important text.
'a',	Defines an anchor tag.
'p',	Defines paragraph text.
'h1',	Defines a level 1 heading.
'h2',	Defines a level 2 heading.
'h3',	Defines a level 3 heading.
'h4',	Defines a level 4 heading.
'ul',	Defines an unordered list.
'ol',	Defines an ordered list.
'li',	Defines a list item.
'code',	Defines a text as code.
'pre',	Defines a block of preformatted text.
'button',	Defines a button in text.

10.4.7. Quick start highlighting markdown reference

The highlighting, or hint, feature enables Quick Starts to contain a link that can highlight and animate a component of the web console.

The markdown syntax contains:

- Bracketed link text
- The **highlight** keyword, followed by the ID of the element that you want to animate

10.4.7.1. Perspective switcher

```
[Perspective switcher]{{highlight qs-perspective-switcher}}
```

10.4.7.2. Administrator perspective navigation links

```
[Home]{{highlight qs-nav-home}}
[Operators]{{highlight qs-nav-operators}}
[Workloads]{{highlight qs-nav-workloads}}
[Serverless]{{highlight qs-nav-serverless}}
[Networking]{{highlight qs-nav-networking}}
[Storage]{{highlight qs-nav-storage}}
[Service catalog]{{highlight qs-nav-servicecatalog}}
[Compute]{{highlight qs-nav-compute}}
[User management]{{highlight qs-nav-usermanagement}}
[Administration]{{highlight qs-nav-administration}}
```

10.4.7.3. Developer perspective navigation links

```
[Add]{{highlight qs-nav-add}}
[Topology]{{highlight qs-nav-topology}}
[Search]{{highlight qs-nav-search}}
[Project]{{highlight qs-nav-project}}
[Helm]{{highlight qs-nav-helm}}
```

10.4.7.4. Common navigation links

```
[Builds]{{highlight qs-nav-builds}}
[Pipelines]{{highlight qs-nav-pipelines}}
[Monitoring]{{highlight qs-nav-monitoring}}
```

10.4.7.5. Masthead links

```
[CloudShell]{{highlight qs-masthead-cloudshell}}
[Utility Menu]{{highlight qs-masthead-utilitymenu}}
[User Menu]{{highlight qs-masthead-usermenu}}
[Applications]{{highlight qs-masthead-applications}}
[Import]{{highlight qs-masthead-import}}
[Help]{{highlight qs-masthead-help}}
[Notifications]{{highlight qs-masthead-notifications}}
```

10.4.8. Code snippet markdown reference

You can execute a CLI code snippet when it is included in a quick start from the web console. To use this feature, you must first install the Web Terminal Operator. The web terminal and code snippet actions that execute in the web terminal are not present if you do not install the Web Terminal Operator. Alternatively, you can copy a code snippet to the clipboard regardless of whether you have the Web Terminal Operator installed or not.

10.4.8.1. Syntax for inline code snippets

~~~~
`code block`{{copy}}
`code block`{{execute}}
~~~~

NOTE

If the **execute** syntax is used, the **Copy to clipboard** action is present whether you have the Web Terminal Operator installed or not.

10.4.8.2. Syntax for multi-line code snippets

~~~~
```
multi line code block
```{{copy}}

```
multi line code block
```{{execute}}
~~~~

10.5. QUICK START CONTENT GUIDELINES

10.5.1. Card copy

You can customize the title and description on a quick start card, but you cannot customize the status.

- Keep your description to one to two sentences.
- Start with a verb and communicate the goal of the user. Correct example:

  ```
  Create a serverless application.
  ```

10.5.2. Introduction

After clicking a quick start card, a side panel slides in that introduces the quick start and lists the tasks within it.

- Make your introduction content clear, concise, informative, and friendly.
- State the outcome of the quick start. A user should understand the purpose of the quick start before they begin.
- Give action to the user, not the quick start.
  - **Correct example**:

> In this quick start, you will deploy a sample application to {product-title}.

  - **Incorrect example**:

    > This quick start shows you how to deploy a sample application to {product-title}.

- The introduction should be a maximum of four to five sentences, depending on the complexity of the feature. A long introduction can overwhelm the user.

- List the quick start tasks after the introduction content, and start each task with a verb. Do not specify the number of tasks because the copy would need to be updated every time a task is added or removed.

  - **Correct example**:

    > Tasks to complete: Create a serverless application; Connect an event source; Force a new revision

  - **Incorrect example**:

    > You will complete these 3 tasks: Creating a serverless application; Connecting an event source; Forcing a new revision

10.5.3. Task steps

After the user clicks **Start**, a series of steps appears that they must perform to complete the quick start.

Follow these general guidelines when writing task steps:

- Use "Click" for buttons and labels. Use "Select" for checkboxes, radio buttons, and drop-down menus.

- Use "Click" instead of "Click on"

  - **Correct example**:

    > Click OK.

  - **Incorrect example**:

    > Click on the OK button.

- Tell users how to navigate between **Administrator** and **Developer** perspectives. Even if you think a user might already be in the appropriate perspective, give them instructions on how to get there so that they are definitely where they need to be.
  Examples:

  > Enter the Developer perspective: In the main navigation, click the dropdown menu and select Developer.
  > Enter the Administrator perspective: In the main navigation, click the dropdown menu and select Admin.

- Use the "Location, action" structure. Tell a user where to go before telling them what to do.

  - **Correct example**:

    > In the node.js deployment, hover over the icon.

  - **Incorrect example**:

    > Hover over the icon in the node.js deployment.

- Keep your product terminology capitalization consistent.

- If you must specify a menu type or list as a dropdown, write "dropdown” as one word without a hyphen.

- Clearly distinguish between a user action and additional information on product functionality.

  - **User action**:

    > Change the time range of the dashboard by clicking the dropdown menu and selecting time range.

  - **Additional information**:

    > To look at data in a specific time frame, you can change the time range of the dashboard.

- Avoid directional language, like "In the top-right corner, click the icon". Directional language becomes outdated every time UI layouts change. Also, a direction for desktop users might not be accurate for users with a different screen size. Instead, identify something using its name.

  - **Correct example**:

    > In the navigation menu, click Settings.

  - **Incorrect example**:

    > In the left-hand menu, click Settings.

- Do not identify items by color alone, like "Click the gray circle". Color identifiers are not useful for sight-limited users, especially colorblind users. Instead, identify an item using its name or copy, like button copy.

  - **Correct example**:

    > The success message indicates a connection.

  - **Incorrect example**:

    > The message with a green icon indicates a connection.

- Use the second-person point of view, you, consistently:

  - **Correct example**:

    > Set up your environment.

- **Incorrect example**:

  > Let's set up our environment.

10.5.4. Check your work module

- After a user completes a step, a **Check your work** module appears. This module prompts the user to answer a yes or no question about the step results, which gives them the opportunity to review their work. For this module, you only need to write a single yes or no question.
  - If the user answers **Yes**, a check mark will appear.
  - If the user answers **No**, an error message appears with a link to relevant documentation, if necessary. The user then has the opportunity to go back and try again.

10.5.5. Formatting UI elements

Format UI elements using these guidelines:

- Copy for buttons, dropdowns, tabs, fields, and other UI controls: Write the copy as it appears in the UI and bold it.
- All other UI elements—including page, window, and panel names: Write the copy as it appears in the UI and bold it.
- Code or user-entered text: Use monospaced font.
- Hints: If a hint to a navigation or masthead element is included, style the text as you would a link.
- CLI commands: Use monospaced font.
- In running text, use a bold, monospaced font for a command.
- If a parameter or option is a variable value, use an italic monospaced font.
- Use a bold, monospaced font for the parameter and a monospaced font for the option.

10.6. ADDITIONAL RESOURCES

- For voice and tone requirements, refer to PatternFly’s brand voice and tone guidelines .
- For other UX content guidance, refer to all areas of PatternFly’s UX writing style guide.