OpenShift Container Platform 4.5

Web console

Getting started with the web console in OpenShift Container Platform

Last Updated: 2021-06-08

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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. 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.

1.1. 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.

1.2. 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. Once 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.

CHAPTER 2. 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.

2.1. 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 3. 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.

3.1. PREREQUISITES

- Deploy an OpenShift Container Platform cluster.

3.2. 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 4. 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.

4.1. 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
```

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

```
$ oc edit console.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 console.operator.openshift.io -o yaml
```

4.2. 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 the **Save** button to apply your changes.

4.3. CUSTOMIZING THE WEB CONSOLE URL

You can update the web console URL, **consoleURL**, to a custom value.

Procedure

1. Modify the cluster instance created by default during installation in the **consoles.operator.openshift.io** custom resource:

```
$ oc patch consoles.operator.openshift.io cluster --patch '{"spec":{"route":
{"hostname":"console.example.com"}}}' --type=merge
```

2. If you specify a custom certificate, you must create a secret in the **openshift-config** namespace that has the key and certificate. For example:

```
$ oc create secret tls console-tls --key=key.pem --cert=cert.pem -n openshift-config
```

Then, add the following stanza to the configuration resource:

```
spec:
  route:
    hostname: console.example.com
    secret:
      name: console-tls
```

4.4. 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.

4.5. 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
```

4.6. 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 the **Create** button to apply your changes.

4.7. 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.

4.8. 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 5. ABOUT THE DEVELOPER PERSPECTIVE IN THE WEB CONSOLE

The OpenShift Container Platform web console provides two perspectives; the **Administrator** perspective and the **Developer** perspective.

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 dockerfiles.
- 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.

5.1. PREREQUISITES

To access the **Developer** perspective, ensure that you have logged in to the web console.

5.2. ACCESSING THE DEVELOPER PERSPECTIVE

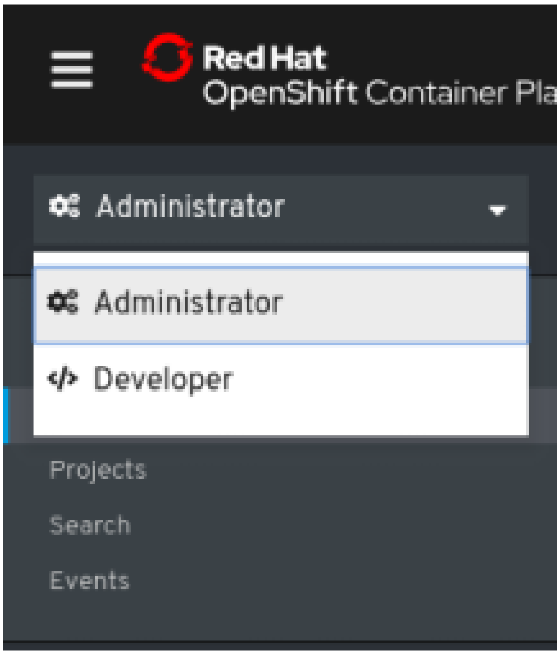
The **Developer** perspective in the OpenShift Container Platform web console provides workflows specific to developer use cases.

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

Procedure

1. Log in to the OpenShift Container Platform web console using your login credentials. The default view for the OpenShift Container Platform web console is the **Administrator** perspective.
2. 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 5.1. Developer perspective



3. 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

- 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

CHAPTER 6. ABOUT THE WEB TERMINAL IN THE WEB CONSOLE

You can launch an embedded command line terminal instance in the OpenShift 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**, and **kubectx**. It also has the context of the project you are working on and automatically logs you in using your credentials.

> **IMPORTANT**
>
> Web terminal 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/.

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

6.2. 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**, and **kubectx** in the web terminal.

6.3. UNINSTALLING THE WEB TERMINAL

Uninstalling the web terminal is a two-step process:

1. Delete the components and custom resources (CRs) that were added when you installed the Operator.
2. Uninstall 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.

6.3.1. Deleting the web terminal components and custom resources

Use the CLI to delete the CRs that are created during installation of the Web Terminal Operator.

Procedure

1. Run the following commands to ensure that all **DevWorkspace** CRs are removed along with their related Kubernetes objects, such as deployments.

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

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

   ```
   $ oc delete components.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. Run the following commands to remove the CRDs:

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

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

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

3. Remove the **DevWorkspace-Webhook-Server** deployment:

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

   NOTE

   When you run this and the following steps, you cannot use the **oc exec** commands to run commands in a container. After you remove the webhooks you will be able to use the **oc exec** commands again.

4. Run the following commands to remove any lingering services, secrets, and config maps:

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

```
$ 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
```

5. Run the following commands to remove mutating or validating webhook configurations:

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

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

6.3.2. Uninstalling the Operator using the web console

Procedure

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

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

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

4. 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 7. DISABLING THE WEB CONSOLE IN OPENSHIFT CONTAINER PLATFORM

You can disable the OpenShift Container Platform web console.

7.1. PREREQUISITES

- Deploy an OpenShift Container Platform cluster.

7.2. DISABLING THE WEB CONSOLE

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

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

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

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

  ```
  apiVersion: config.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.