



Red Hat build of Keycloak 22.0

Getting Started Guide

Legal Notice

Copyright © 2024 Red Hat, Inc.

The text of and illustrations in this document are licensed by Red Hat under a Creative Commons Attribution–Share Alike 3.0 Unported license ("CC-BY-SA"). An explanation of CC-BY-SA is available at

<http://creativecommons.org/licenses/by-sa/3.0/>

. In accordance with CC-BY-SA, if you distribute this document or an adaptation of it, you must provide the URL for the original version.

Red Hat, as the licensor of this document, waives the right to enforce, and agrees not to assert, Section 4d of CC-BY-SA to the fullest extent permitted by applicable law.

Red Hat, Red Hat Enterprise Linux, the Shadowman logo, the Red Hat logo, JBoss, OpenShift, Fedora, the Infinity logo, and RHCE are trademarks of Red Hat, Inc., registered in the United States and other countries.

Linux[®] is the registered trademark of Linus Torvalds in the United States and other countries.

Java[®] is a registered trademark of Oracle and/or its affiliates.

XFS[®] is a trademark of Silicon Graphics International Corp. or its subsidiaries in the United States and/or other countries.

MySQL[®] is a registered trademark of MySQL AB in the United States, the European Union and other countries.

Node.js[®] is an official trademark of Joyent. Red Hat is not formally related to or endorsed by the official Joyent Node.js open source or commercial project.

The OpenStack[®] Word Mark and OpenStack logo are either registered trademarks/service marks or trademarks/service marks of the OpenStack Foundation, in the United States and other countries and are used with the OpenStack Foundation's permission. We are not affiliated with, endorsed or sponsored by the OpenStack Foundation, or the OpenStack community.

All other trademarks are the property of their respective owners.

Abstract

This guide helps you practice using Red Hat build of Keycloak 22.0 to evaluate it before you use it in a production environment. It includes instructions for installing and running the Red Hat build of Keycloak server in development mode, creating realms and accounts for managing users and applications, and securing a Single Page Application (SPA)

Table of Contents

MAKING OPEN SOURCE MORE INCLUSIVE	3
CHAPTER 1. GETTING STARTED	4
1.1. BEFORE YOU START	4
1.2. DOWNLOAD RED HAT BUILD OF KEYCLOAK	4
1.3. START RED HAT BUILD OF KEYCLOAK	4
1.4. CREATE AN ADMIN USER	4
1.5. LOG IN TO THE ADMIN CONSOLE	4
1.6. CREATE A REALM	4
1.7. CREATE A USER	5
1.8. LOG IN TO THE ACCOUNT CONSOLE	7
1.9. SECURE THE FIRST APPLICATION	7
1.10. TAKING THE NEXT STEP	9

MAKING OPEN SOURCE MORE INCLUSIVE

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

CHAPTER 1. GETTING STARTED

1.1. BEFORE YOU START

Make sure you have [OpenJDK 17](#) installed.

1.2. DOWNLOAD RED HAT BUILD OF KEYCLOAK

Download Red Hat build of Keycloak from the [Red Hat website](#) and extract it.

After extracting this file, you should have a directory that is named **rhbk-22.0.11**.

1.3. START RED HAT BUILD OF KEYCLOAK

1. From a terminal, open the **rhbk-22.0.11** directory.
2. Enter the following command:

- On Linux, run:

```
bin/kc.sh start-dev
```

- On Windows, run:

```
bin\kc.bat start-dev
```

Using the **start-dev** option, you are starting Red Hat build of Keycloak in development mode. In this mode, you can try out Red Hat build of Keycloak for the first time to get it up and running quickly. This mode offers convenient defaults for developers, such as for developing a new Red Hat build of Keycloak theme.

1.4. CREATE AN ADMIN USER

Red Hat build of Keycloak has no default admin user. You need to create an admin user before you can start Keycloak.

1. Open <http://localhost:8080/>.
2. Fill in the form with your preferred username and password.

1.5. LOG IN TO THE ADMIN CONSOLE

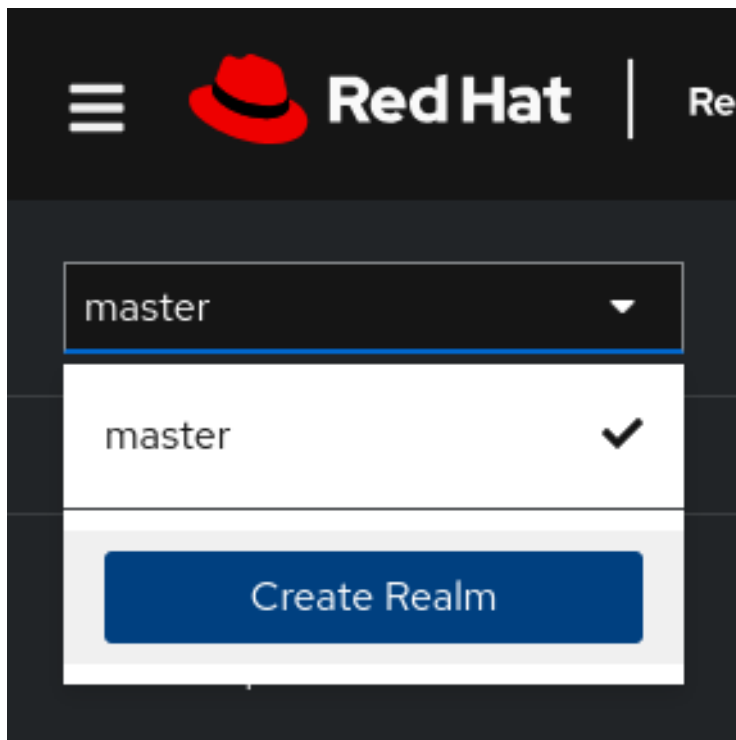
1. Go to the [Red Hat build of Keycloak Admin Console](#).
2. Log in with the username and password you created earlier.

1.6. CREATE A REALM

A realm in Red Hat build of Keycloak is equivalent to a tenant. Each realm allows an administrator to create isolated groups of applications and users. Initially, Red Hat build of Keycloak includes a single realm, called **master**. Use this realm only for managing Red Hat build of Keycloak and not for managing any applications.

Use these steps to create the first realm.

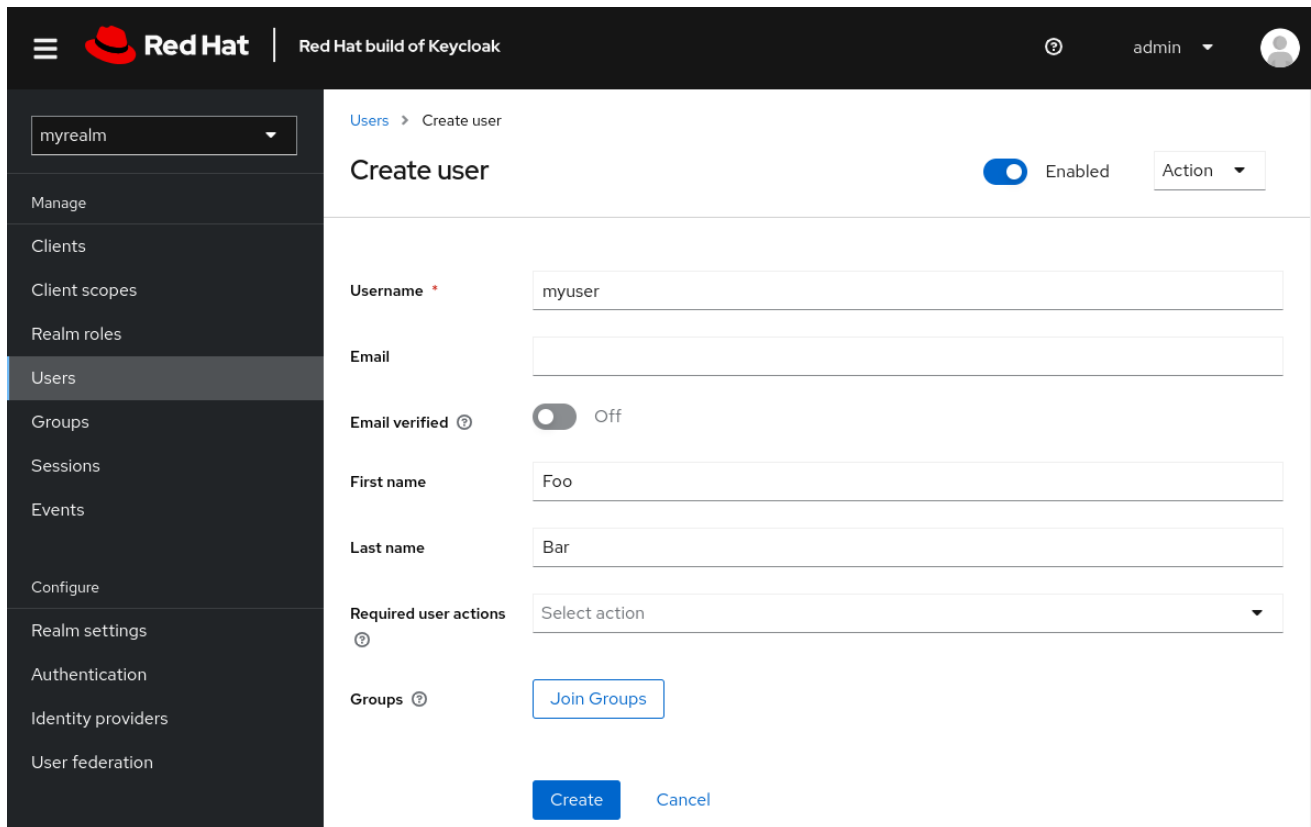
1. Open the [Red Hat build of Keycloak Admin Console](#).
2. Click the word **master** in the top-left corner, then click **Create Realm**.
3. Enter **myrealm** in the **Realm name** field.
4. Click **Create**.



1.7. CREATE A USER

Initially, the realm has no users. Use these steps to create a user:

1. Open the [Red Hat build of Keycloak Admin Console](#).
2. Click the word **master** in the top-left corner, then click **myrealm**.
3. Click **Users** in the left-hand menu.
4. Click **Add user**.
5. Fill in the form with the following values:
 - **Username:** **myuser**
 - **First name:** any first name
 - **Last name:** any last name
6. Click **Create**.



Red Hat build of Keycloak

admin

myrealm

Users > Create user

Create user Enabled Action

Username * myuser

Email

Email verified Off

First name Foo

Last name Bar

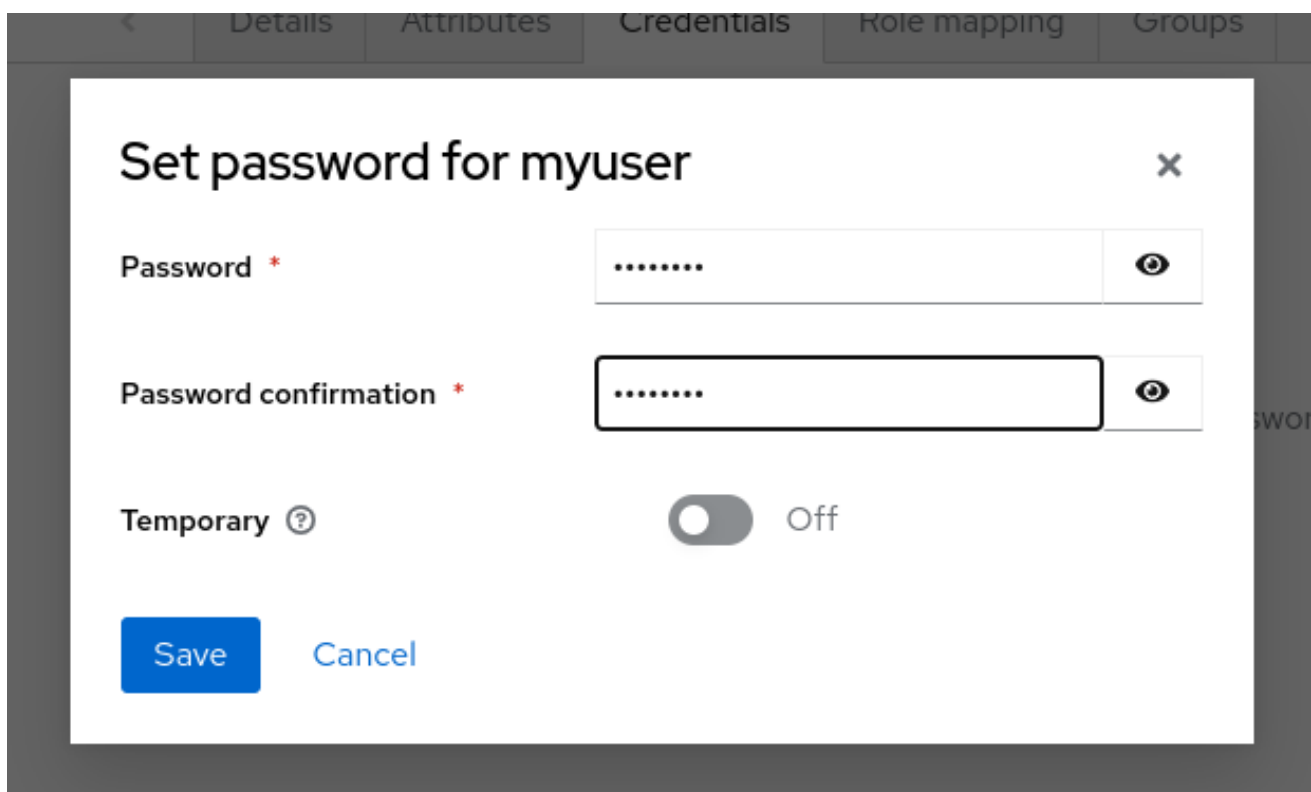
Required user actions Select action

Groups Join Groups

Create Cancel

This user needs a password to log in. To set the initial password:

1. Click **Credentials** at the top of the page.
2. Fill in the **Set password** form with a password.
3. Toggle **Temporary** to **Off** so that the user does not need to update this password at the first login.



Details Attributes Credentials Role mapping Groups

Set password for myuser ×

Password * 👁

Password confirmation * 👁

Temporary Off

Save Cancel

1.8. LOG IN TO THE ACCOUNT CONSOLE

You can now log in to the Account Console to verify this user is configured correctly.

1. Open the [Red Hat build of Keycloak Account Console](#) .
2. Log in with **myuser** and the password you created earlier.

As a user in the Account Console, you can manage your account including modifying your profile, adding two-factor authentication, and including identity provider accounts.

The screenshot shows the 'Personal info' page in the Red Hat build of Keycloak Account Console. The page has a dark header with the Red Hat logo and 'Red Hat build of Keycloak' text. A 'Sign out' button and 'Foo Bar' are in the top right. The left sidebar has 'Personal info', 'Account security', and 'Applications'. The main content area is titled 'Personal info' and contains the text 'Manage your basic information.' and 'All fields are required.' Below this are three input fields: 'Username' with the value 'myuser', 'First name' with the value 'Foo', and 'Last name' with the value 'Bar'. At the bottom of the form are 'Save' and 'Cancel' buttons.

1.9. SECURE THE FIRST APPLICATION

To secure the first application, you start by registering the application with your Red Hat build of Keycloak instance:

1. Open the [Red Hat build of Keycloak Admin Console](#) .
2. Click the word **master** in the top-left corner, then click **myrealm**.
3. Click **Clients**.
4. Click **Create client**
5. Fill in the form with the following values:
 - **Client type: OpenID Connect**
 - **Client ID: myclient**

The screenshot shows the 'Create client' page in the Red Hat build of Keycloak. The left sidebar contains a navigation menu with options like 'Manage', 'Clients', 'Client scopes', 'Realm roles', 'Users', 'Groups', 'Sessions', 'Events', 'Configure', 'Realm settings', 'Authentication', 'Identity providers', and 'User federation'. The main content area is titled 'Create client' and includes a sub-header 'Clients > Create client'. Below this, there's a section for 'General Settings' with a blue indicator '1'. The form fields include: 'Client type' (OpenID Connect), 'Client ID' (myclient), 'Name' (empty), 'Description' (empty), and 'Always display in console' (toggle off). At the bottom, there are 'Next', 'Back', and 'Cancel' buttons.

6. Click **Next**
7. Confirm that **Standard flow** is enabled.
8. Click **Next**.
9. Make these changes under **Login settings**.
 - Set **Valid redirect URIs** to **https://www.keycloak.org/app/***
 - Set **Web origins** to **https://www.keycloak.org**
10. Click **Save**.

To confirm the client was created successfully, you can use the SPA testing application on the [Keycloak website](https://www.keycloak.org/app/).

1. Open <https://www.keycloak.org/app/>.
2. Click **Save** to use the default configuration.
3. Click **Sign in** to authenticate to this application using the Red Hat build of Keycloak server you started earlier.

1.10. TAKING THE NEXT STEP

Before you run Red Hat build of Keycloak in production, consider the following actions:

- Switch to a production ready database such as PostgreSQL.
- Configure SSL with your own certificates.
- Switch the admin password to a more secure password.

For more information, see the [Server Guide](#).