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OpenJDK

Get started with Keycloak on bare metal

Before you start

Make sure your machine or container platform can provide sufficient memory and CPU for your desired usage of Keycloak. See [Concepts for sizing CPU and memory resources](#) for more on how to get started with production sizing.

Make sure you have [OpenJDK 21](#) installed.

Download Keycloak

Download and extract [keycloak-25.0.1.zip](#) from the Keycloak website.

After extracting this file, you should have a directory that is named `keycloak-25.0.1`.

Start Keycloak

1. From a terminal, open the `keycloak-25.0.1` 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 Keycloak in development mode. In this mode, you can try out 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 Keycloak theme.

Create an admin user

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.

Log in to the Admin Console

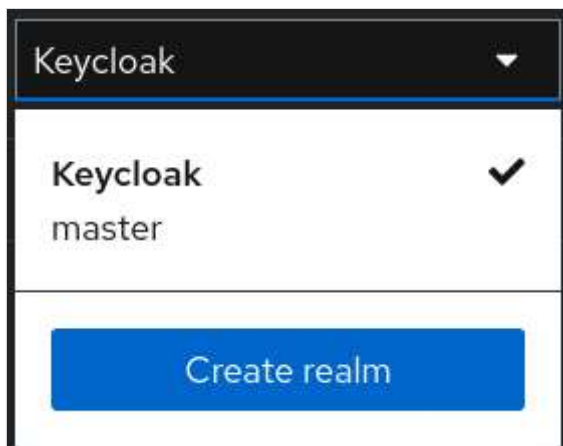
1. Go to the [Keycloak Admin Console](#).
2. Log in with the username and password you created earlier.

Create a realm

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

Use these steps to create the first realm.

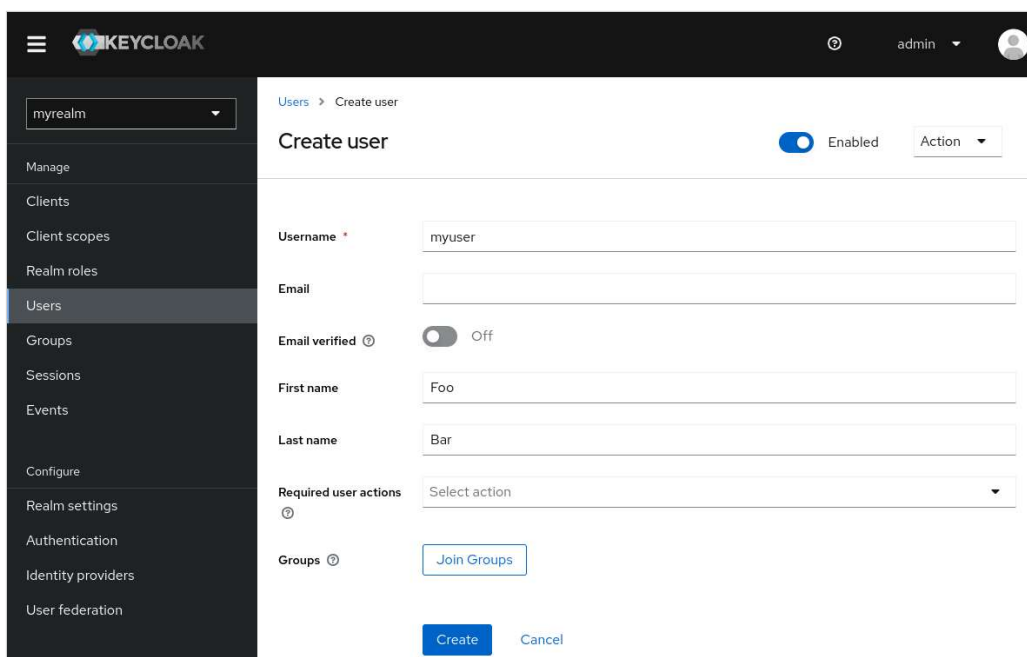
1. Open the [Keycloak Admin Console](#).
2. Click **Keycloak** next to **master realm**, then click **Create Realm**.
3. Enter `myrealm` in the **Realm name** field.
4. Click **Create**.



Create a user

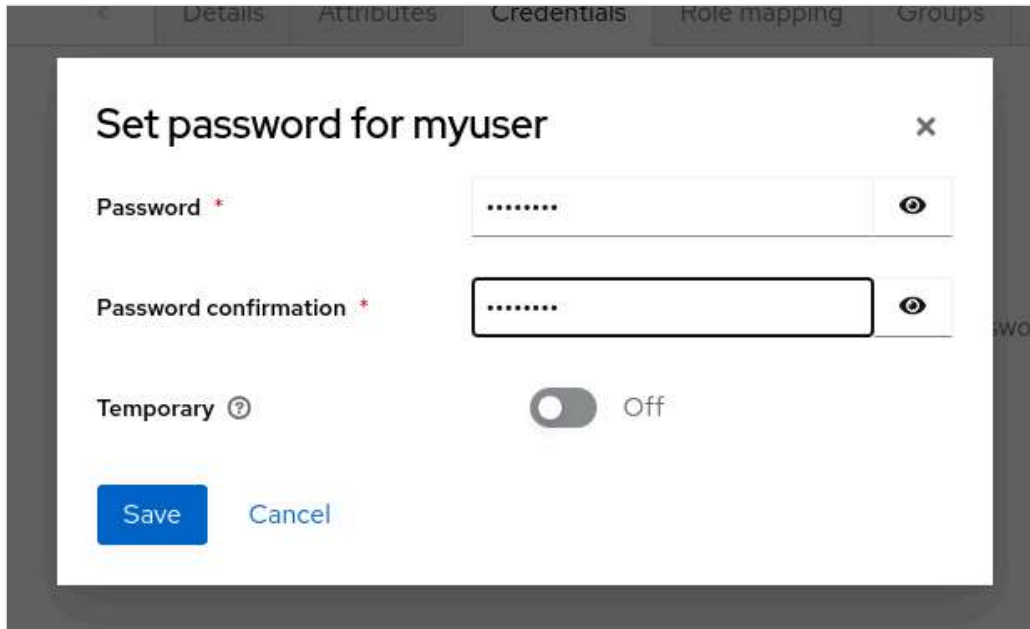
Initially, the realm has no users. Use these steps to create a user:

1. Verify that you are still in the **myrealm** realm, which is shown above the word **Manage**.
2. Click **Users** in the left-hand menu.
3. Click **Add user**.
4. Fill in the form with the following values:
 - **Username:** `myuser`
 - **First name:** any first name
 - **Last name:** any last name
5. Click **Create**.

A screenshot of the Keycloak 'Create user' form. The interface has a dark sidebar on the left with a menu including 'Manage', 'Clients', 'Client scopes', 'Realm roles', 'Users' (highlighted), 'Groups', 'Sessions', 'Events', 'Configure', 'Realm settings', 'Authentication', 'Identity providers', and 'User federation'. The main area has a header 'Create user' with an 'Enabled' toggle and an 'Action' dropdown. The form fields include: 'Username' (filled with 'myuser'), 'Email' (empty), 'Email verified' (toggle set to 'Off'), 'First name' (filled with 'Foo'), 'Last name' (filled with 'Bar'), 'Required user actions' (dropdown set to 'Select action'), and 'Groups' (button labeled 'Join Groups'). At the bottom are 'Create' and 'Cancel' buttons.

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.

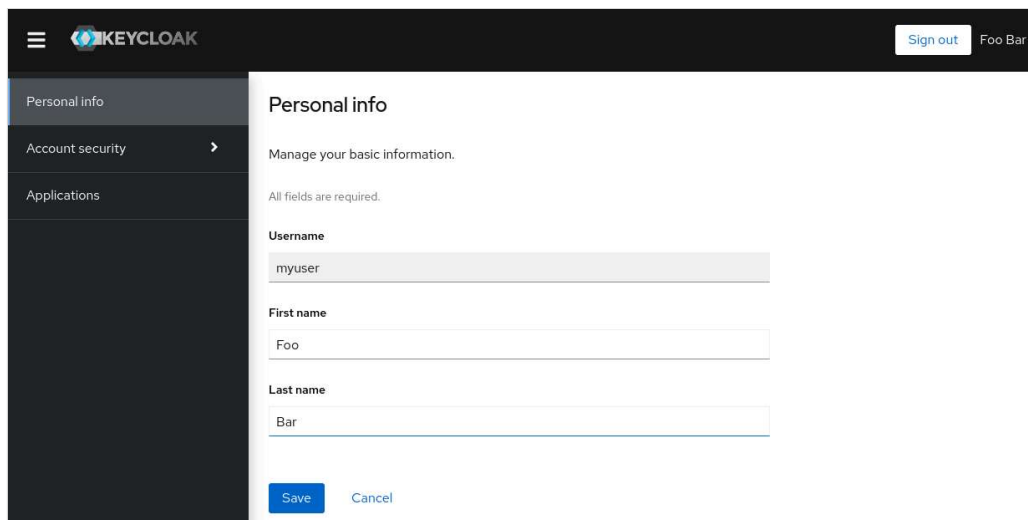
A screenshot of the Keycloak user management interface. At the top, there are tabs: 'Details', 'Attributes', 'Credentials', 'Role mapping', and 'Groups'. The 'Credentials' tab is selected. Below the tabs is a modal window titled 'Set password for myuser' with a close button (X) in the top right corner. Inside the modal, there are two password input fields. The first is labeled 'Password *' and the second is labeled 'Password confirmation *'. Both fields contain masked text (dots) and have an eye icon to toggle visibility. Below the password fields is a 'Temporary' toggle switch, which is currently turned off, with the text 'Off' next to it. At the bottom of the modal are two buttons: a blue 'Save' button and a light blue 'Cancel' button.

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 [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.

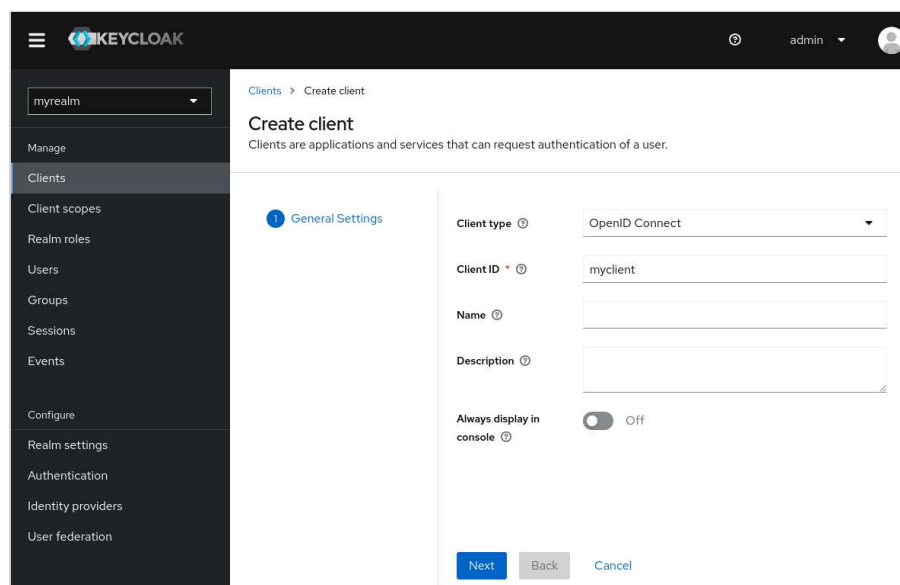


The screenshot shows the Keycloak 'Personal info' page. The left sidebar has a menu with 'Personal info' (selected), 'Account security', and 'Applications'. The main content area is titled 'Personal info' and contains the text 'Manage your basic information.' and 'All fields are required.' Below this are three text input fields: 'Username' with the value 'myuser', 'First name' with the value 'Foo', and 'Last name' with the value 'Bar'. At the bottom are 'Save' and 'Cancel' buttons.

Secure the first application

To secure the first application, you start by registering the application with your Keycloak instance:

1. Open the [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 Keycloak Admin Console. The left sidebar has a menu with 'myrealm' (selected), 'Manage', 'Clients' (selected), '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 contains the text 'Clients are applications and services that can request authentication of a user.' Below this is a 'General Settings' section with the following fields: 'Client type' (dropdown menu with 'OpenID Connect' selected), 'Client ID' (text input with 'myclient'), 'Name' (text input), 'Description' (text input), and 'Always display in console' (toggle switch with 'Off' selected). At the bottom are 'Next', 'Back', and 'Cancel' buttons.

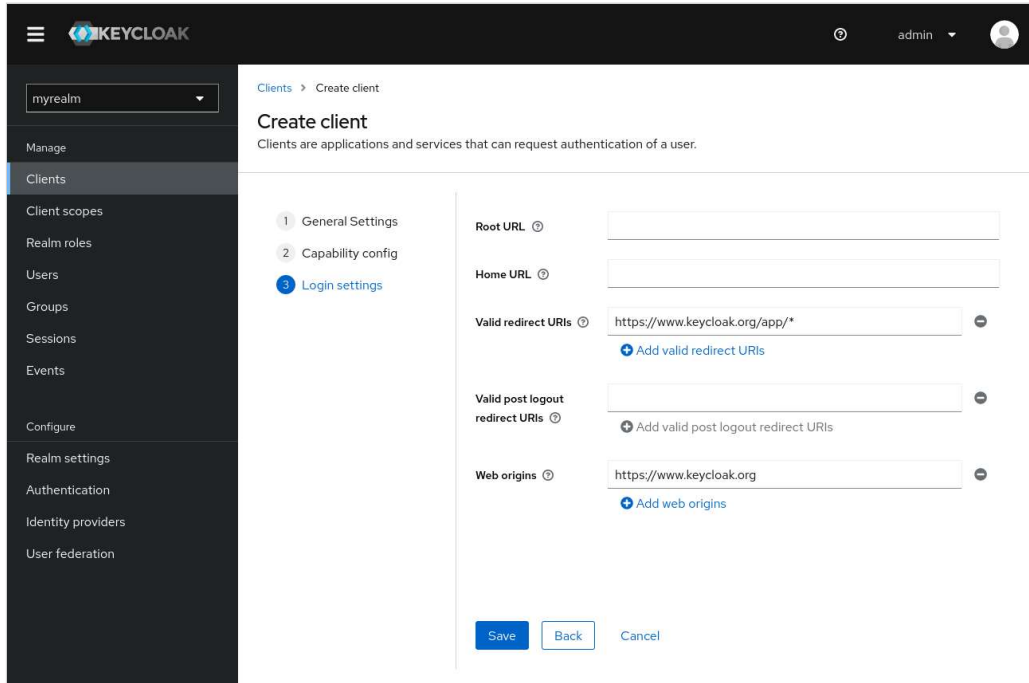
6. Click **Next**
7. Confirm that **Standard flow** is enabled.

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**.



The screenshot shows the Keycloak administration interface. On the left is a sidebar with navigation options: Manage, Clients, Client scopes, Realm roles, Users, Groups, Sessions, Events, Configure, Realm settings, Authentication, Identity providers, and User federation. The 'Clients' section is selected. The main area is titled 'Create client' and 'Create client' with a subtitle 'Clients are applications and services that can request authentication of a user.' Below this is a list of tabs: 1 General Settings, 2 Capability config, and 3 Login settings (which is active). The 'Login settings' tab contains several input fields: 'Root URL', 'Home URL', 'Valid redirect URIs' (containing 'https://www.keycloak.org/app/*'), 'Valid post logout redirect URIs', and 'Web origins' (containing 'https://www.keycloak.org'). Each field has a '+' icon to add more values. At the bottom of the form are three buttons: 'Save' (in blue), 'Back', and 'Cancel'.

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

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 Keycloak server you started earlier.

Taking the next step

Before you run 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 guides](#).

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