FLOWX.AI

PLATFORM SETUP GUIDES / Access management

Contents

PLATFORM SETUP GUIDES / Access management / Configuring an IAM solution

Recommended Keycloak setup

To configure a minimal required Keycloak setup, follow these steps:

- Create a new realm
    - Define available roles and realm-level roles assigned to new users.
- Create/import user roles and groups
- Create new users
- Add clients
    - Configure access type, valid redirect URIs, and enable necessary flows.
- Add role mappers
- Add service accounts
    - Set up **admin**, **task management**, and **process engine** service accounts.

> **INFO**
>
> Recommended keycloak version: **18.0.x**

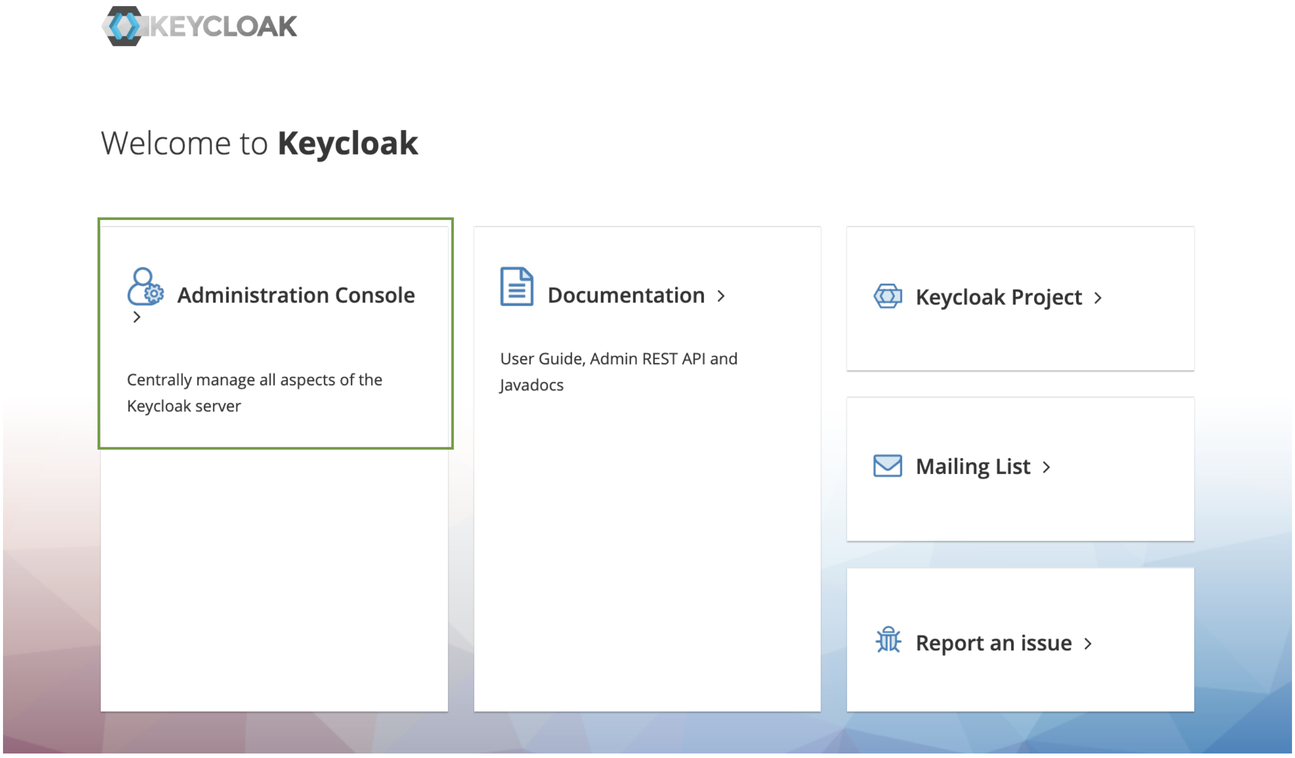
For more detailed information, refer to the official Keycloak documentation:

» Keycloak documentation

Creating a new realm

A realm is a space where you manage objects, including users, applications, roles, and groups. To create a new realm:

1. Log in to the **Keycloak Admin Console** using the appropriate URL for your environment (e.g., QA, development, production).

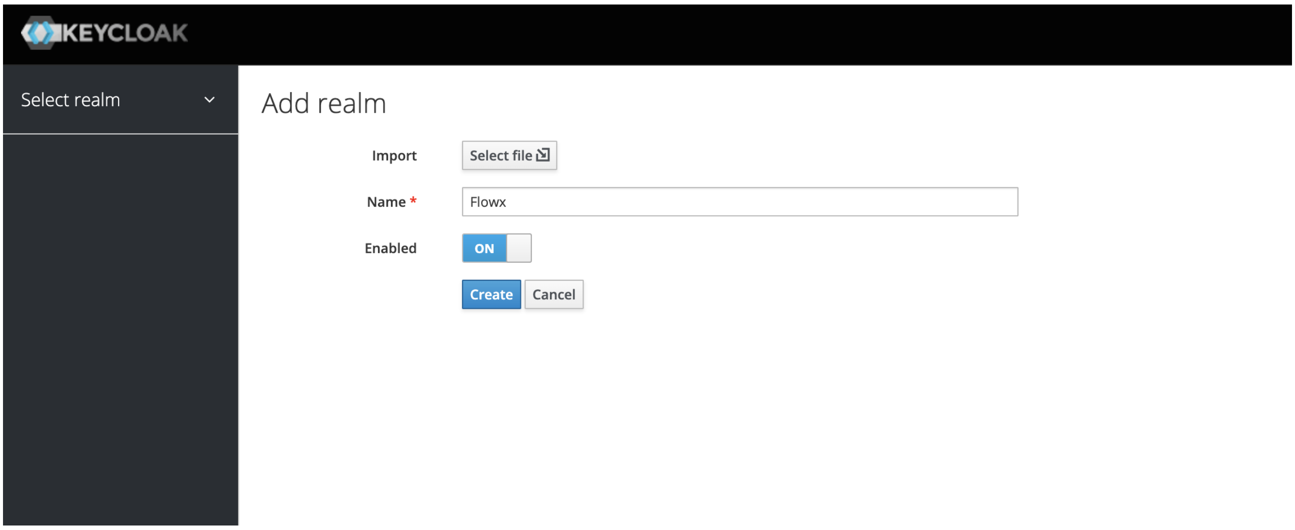


Welcome to **Keycloak**

2. In the top left corner dropdown menu, click **Add Realm**.

> **INFO**
>
> If you are logged in to the master realm this dropdown menu lists all the realms created. The **Add Realm** page opens.

3. Enter a realm name and click Create.



Add realm

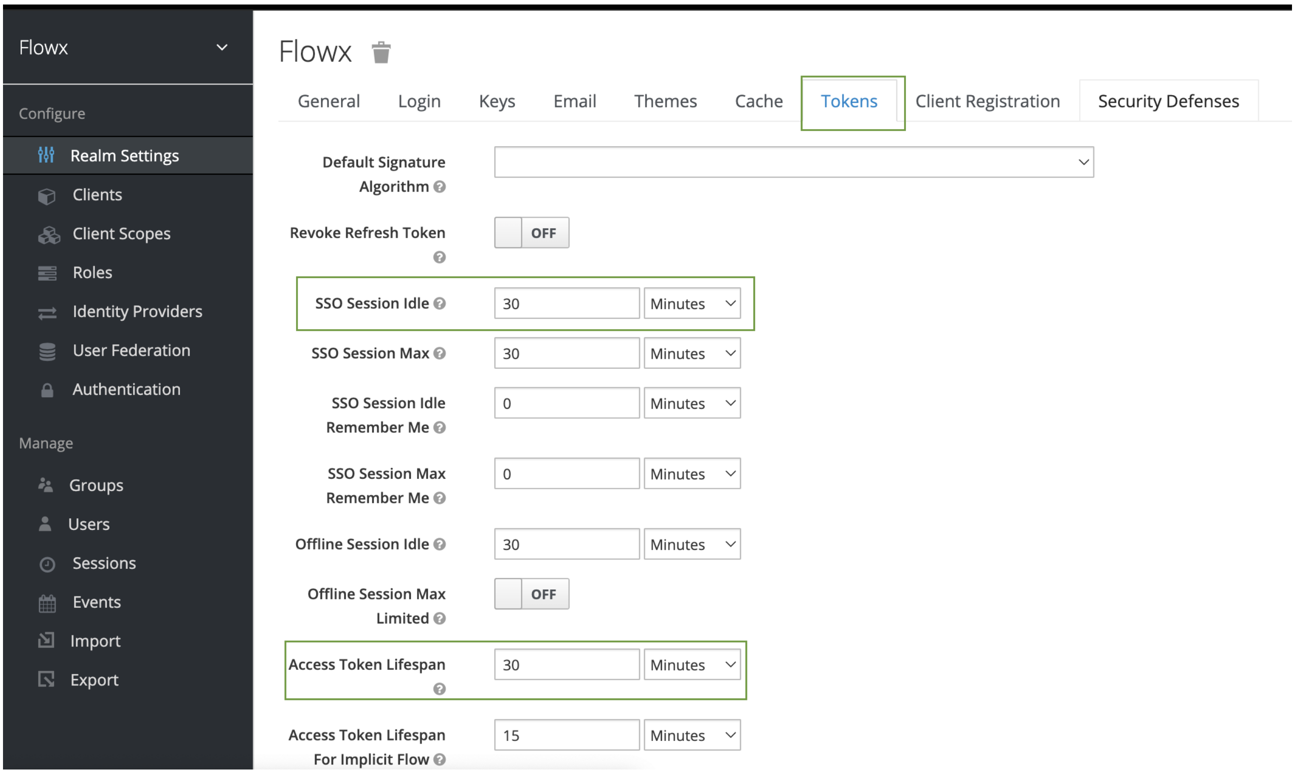
Import Select file

Name * Flowx

Enabled ON

4. Configure the realm settings (**Realm Settings → Tokens**), such as SSO session idle and access token lifespan, according to your organization's needs:

- **SSO Session idle -** suggested: **30 Minutes**
- **Access Token Lifespan -** suggested: **30 Minutes**



Default Signature Algorithm

Revoke Refresh Token: OFF

SSO Session Idle: 30 Minutes

SSO Session Max: 30 Minutes

SSO Session Idle Remember Me: 0 Minutes

SSO Session Max Remember Me: 0 Minutes

Offline Session Idle: 30 Minutes

Offline Session Max Limited: OFF

Access Token Lifespan: 30 Minutes

Access Token Lifespan For Implicit Flow: 15 Minutes

Creating/importing user groups and roles

You can either create or import a user group into a realm. We prepared a script that helps you to import a **super admin group** provided with the necessary **default user roles**.

You can create or import user groups into a realm. If you choose to import, follow the provided script to import a **super admin group**(`SUPER_ADMIN_USERS`) with **default user roles**. After importing, add an admin user to the group and assign the necessary roles.

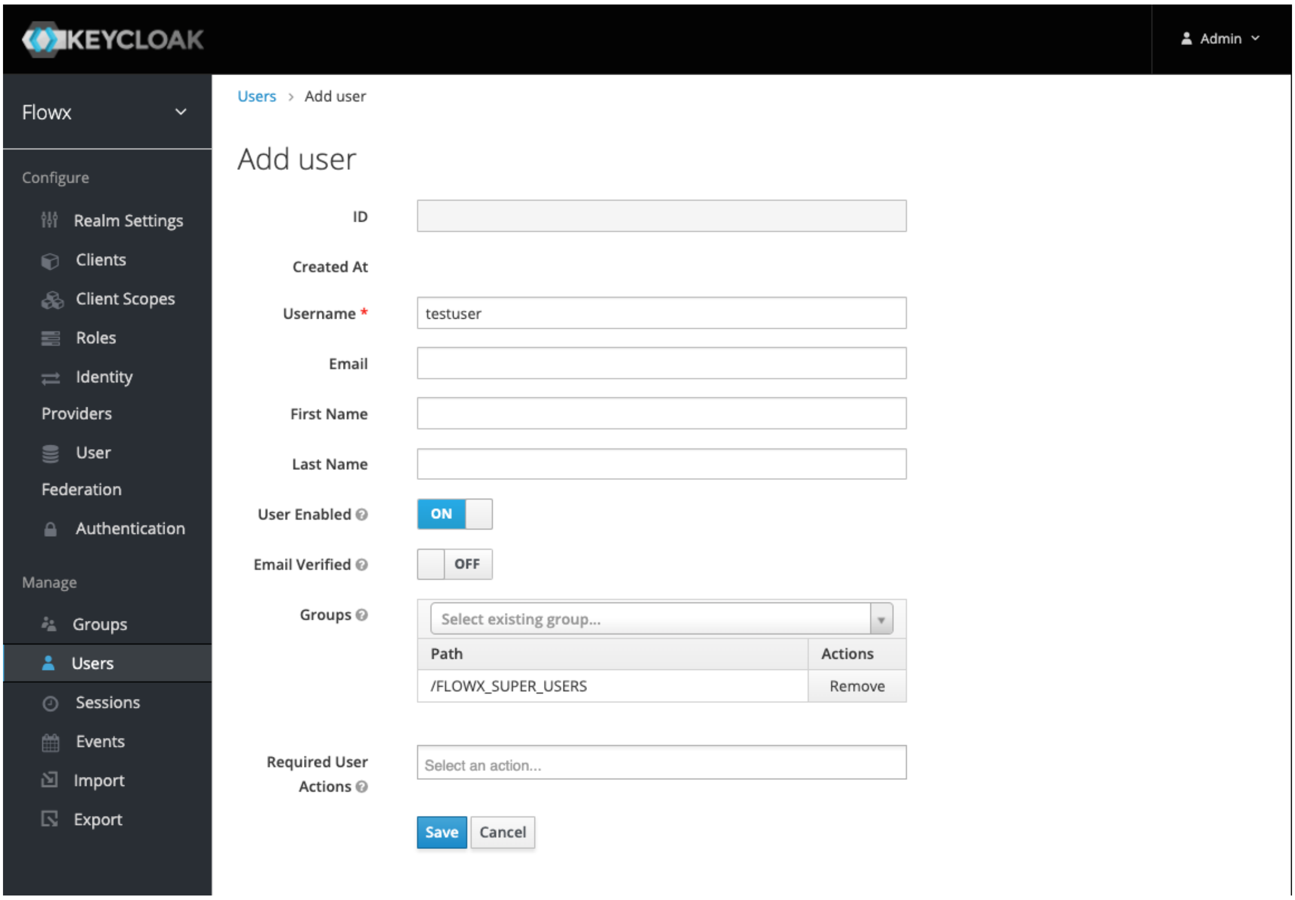
Make sure to validate the imported roles by checking the following section:

» Default roles

Creating new users

To create a new user in a realm and generate a temporary password:

1. In the left menu bar, click **Users** to open the user list page.
2. On the right side of the empty user list, click **Add User**.
3. Fill in the required fields, including the **username**, and ensure **Email Verified** is set to **ON**.
4. In the **Groups** field, choose a group from the dropdown menu, in our case: `FLOWX_SUPER_USERS`.

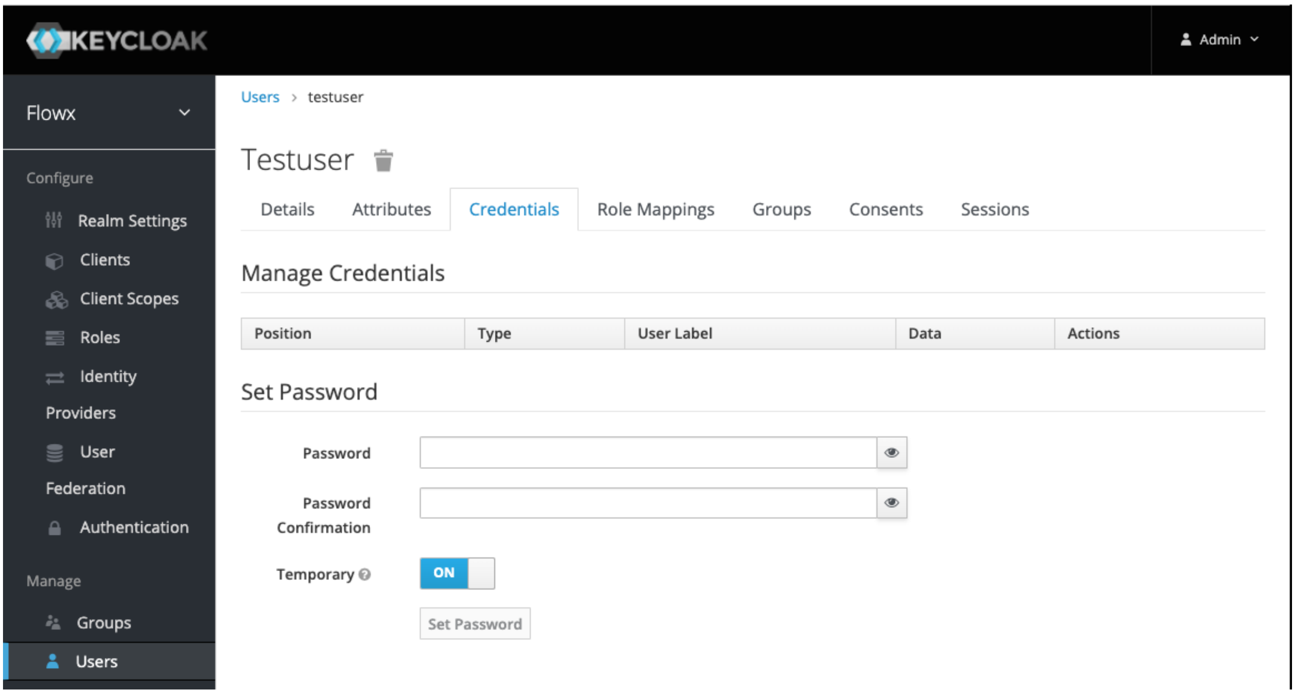


Add user

ID	
Created At	
Username *	testuser
Email	
First Name	
Last Name	
User Enabled	ON
Email Verified	OFF
Groups	Select existing group...
Required User Actions	Select an action...

Path	Actions
/FLOWX_SUPER_USERS	Remove

5. Save the user, go to the **Credentials** tab, and set a temporary password.



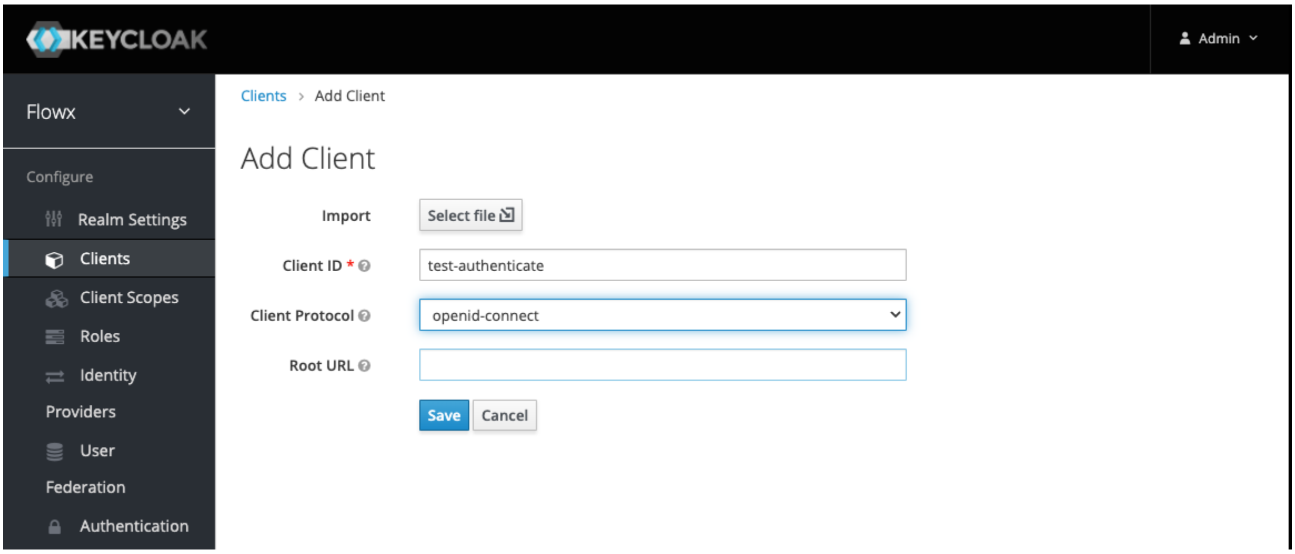
Position	Type	User Label	Data	Actions

Temporary ON

Adding clients

Clients represent trusted browser apps and web services in a realm. To add clients:

1. Click **Clients** in the top left menu, then click **Create**.
2. Set a client ID as `{example}-authenticate`, which will be used for login, logout, and refresh token operations.
3. Set the **Client Protocol** type as `openid-connect`.



Add Client

Import: Select file

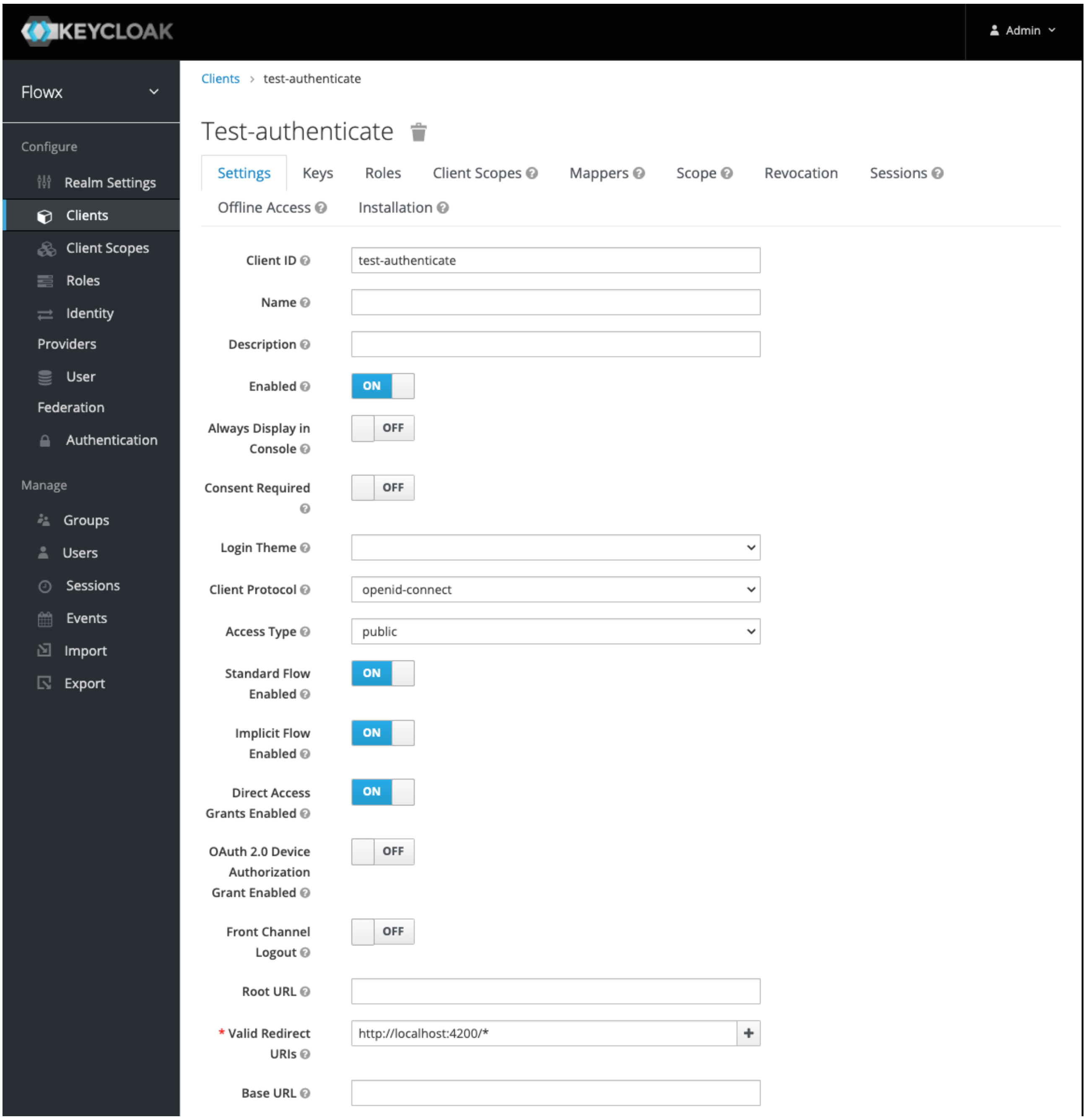
Client ID *: test-authenticate

Client Protocol: openid-connect

Root URL:

3. Open the newly created **client** and edit the following properties:

- Set **Access type** to **public** (this will not require a secret)
- Set **Valid redirect URIs**, specifying a valid URI pattern that a browser can redirect to after a successful login or logout, simple wildcards are allowed
- Enable **Direct Access Grants** and **Implicit Flow** by setting them to **ON**.
- Switch **Backchannel Logout Session Required** to **OFF**



Client ID	test-authenticate
Name	
Description	
Enabled	ON
Always Display in Console	OFF
Consent Required	OFF
Login Theme	
Client Protocol	openid-connect
Access Type	public
Standard Flow Enabled	ON
Implicit Flow Enabled	ON
Direct Access Grants Enabled	ON
OAuth 2.0 Device Authorization Grant Enabled	OFF
Front Channel Logout	OFF
Root URL	
* Valid Redirect URIs	http://localhost:4200/*
Base URL	

4. Add **mappers** to `{example}-authenticate` client.

INFO

> Refer to the next section on how to add mappers and which mappers to clients.

Adding protocol mappers

Protocol mappers in Keycloak allow for the transformation of tokens and documents, enabling actions such as mapping user data into protocol claims or modifying requests between clients and the authentication server.

To enhance your clients, consider adding the following mappers:

- Group Membership mapper - `realm-groups`: This mapper can be utilized to map user groups to the authorization token.
- User Attribute mapper - `business filter mapper`: Use this mapper to map custom attributes, for example, mapping the businessFilters list, to the token claim.
- User Realm role - `realm-roles`: This mapper enables mapping a user's realm role to a token claim.

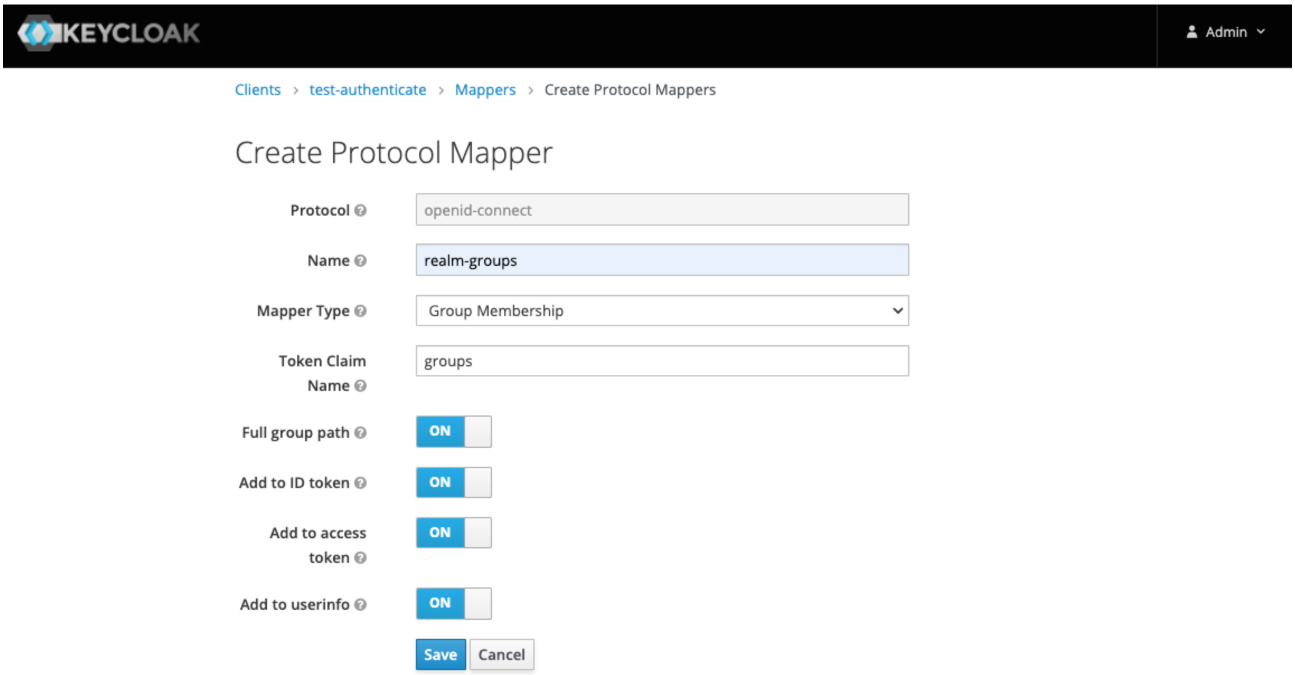
By incorporating these mappers, you can further customize and enrich the information contained within your tokens.

Group Membership mapper

To add a group membership mapper:

1. Navigate to **Clients** and select your desired client, in our case, `{example}-authenticate`

2. Go to the **Mappers** tab and click **Create** to create a new mapper.
3. Provide a descriptive **Name** for the mapper to easily identify its purpose.
4. Select **Group Membership** as the mapper type.
5. Set the token claim name for including groups in the token. In this case, set it as `groups`.



Clients > test-authenticate > Mappers > Create Protocol Mappers

Create Protocol Mapper

Protocol: openid-connect

Name: realm-groups

Mapper Type: Group Membership

Token Claim Name: groups

Full group path: ON

Add to ID token: ON

Add to access token: ON

Add to userinfo: ON

By configuring the group membership mapper, you will be able to include the user's group information in the token for authorization purposes.

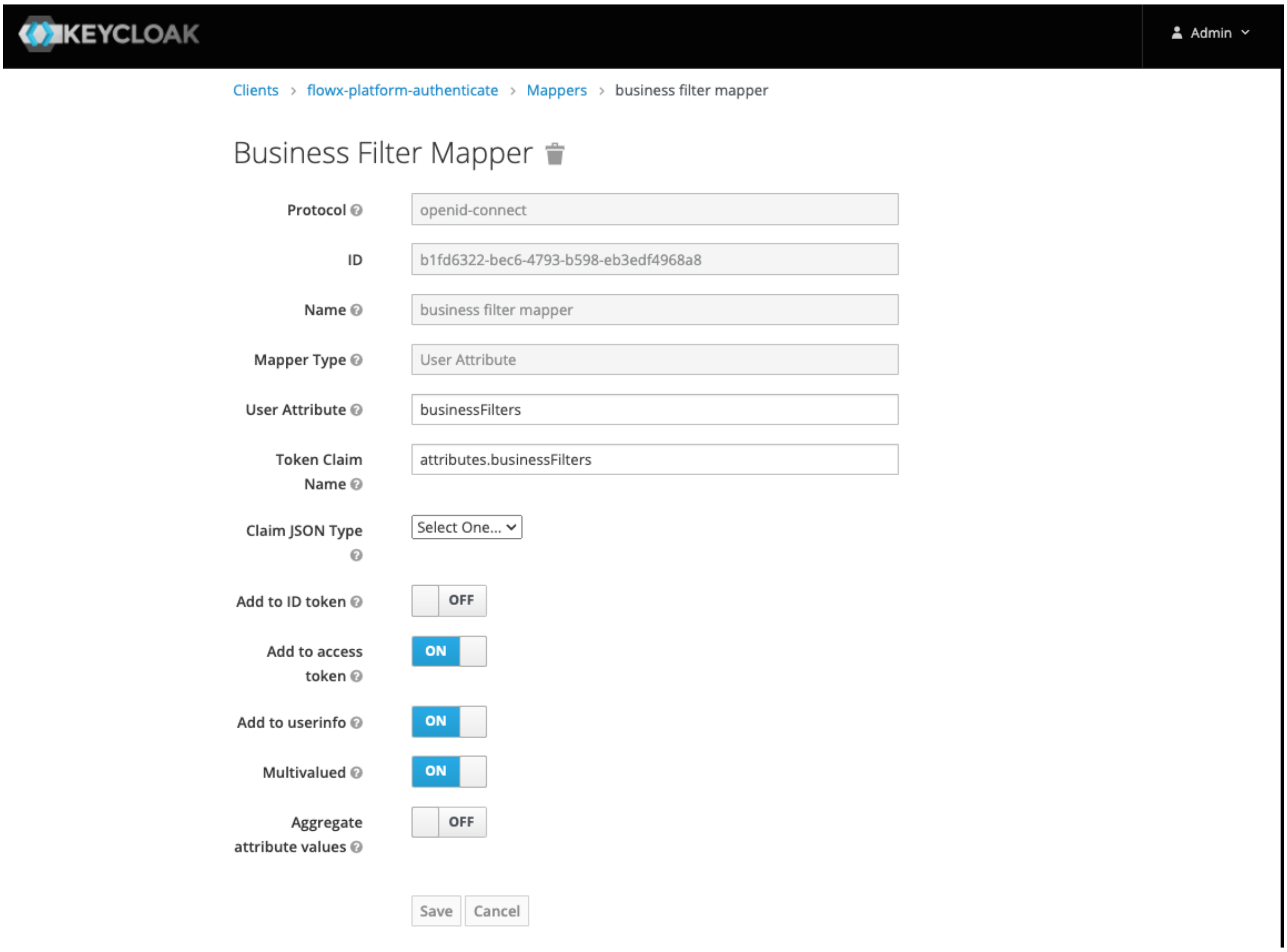
User Attribute mapper

To include custom attributes such as **business filters** in the token claim, you can add a user attribute mapper with the following settings:

1. Go to the desired client, `{example}-authenticate`, and navigate to the Mappers section.

2. Click on **Create** to create a new mapper.
3. Configure the following settings for the user attribute mapper:

- **Mapper Type**: User Attribute
- **User Attribute**: businessFilters
- **Token Claim Name**: attirubtes.businessFilters
- **Add to ID token**: OFF
- **Multivalued**: ON



Clients › flowx-platform-authenticate › Mappers › business filter mapper

Business Filter Mapper

Protocol	openid-connect
ID	b1fd6322-bec6-4793-b598-eb3edf4968a8
Name	business filter mapper
Mapper Type	User Attribute
User Attribute	businessFilters
Token Claim Name	attributes.businessFilters
Claim JSON Type	Select One...
Add to ID token	OFF
Add to access token	ON
Add to userinfo	ON
Multivalued	ON
Aggregate attribute values	OFF

Save Cancel

By adding this user attribute mapper, the custom attribute "businessFilters" will be included in the token claim under the name "attributes.businessFilters". This will allow you to access and utilize the business filters information within your application.

You can find more information about business filters in the following section:

» Business filters

User realm role

Add **roles mapper** to `{example}-authenticate` client - so roles will be available on the OAuth user info response.

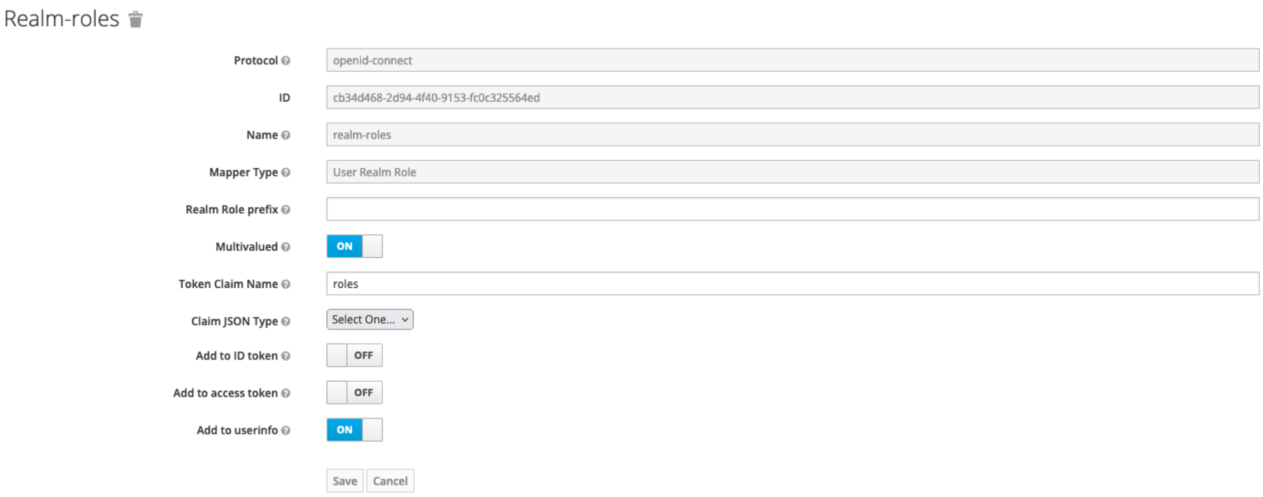
To add a roles mapper, follow these steps:

1. Go to the desired client, `{example}-authenticate`, and navigate to the Mappers section.
2. Click on **Create** to create a new mapper.
3. Configure the following settings for the user attribute mapper:

- **Mapper Type**: User Realm Role
- **Token Claim Name**: role
- **Add to userinfo**: ON

By adding this roles mapper, the assigned realm roles of the user will be available in the OAuth user info response under the claim name "roles". This allows you to access and utilize the user's realm roles within your application.

Please note that you can repeat these steps to add multiple roles mappers if you need to include multiple realm roles in the token claim.



Realm-roles

Protocol	openid-connect
ID	cb34d468-2d94-4f40-9153-fc0c325564ed
Name	realm-roles
Mapper Type	User Realm Role
Realm Role prefix	
Multivalued	ON
Token Claim Name	roles
Claim JSON Type	Select One...
Add to ID token	OFF
Add to access token	OFF
Add to userinfo	ON

Examples

Login

```
curl --location --request POST
'http://localhost:8080/realms/flowx/protocol/openid-
connect/token' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--data-urlencode 'grant_type=password' \
--data-urlencode 'username=admin@flowx.ai' \
--data-urlencode 'password=password' \
--data-urlencode 'client_id= example-authenticate'
```

Refresh token

```
curl --location --request POST
'http://localhost:8080/realms/flowx/protocol/openid-
connect/token' \
--header 'Content-Type: application/x-www-form-urlencoded' \
--data-urlencode 'grant_type=refresh_token' \
--data-urlencode 'client_id= example-authenticate' \
--data-urlencode 'refresh_token=ACCESS_TOKEN'
```

User info

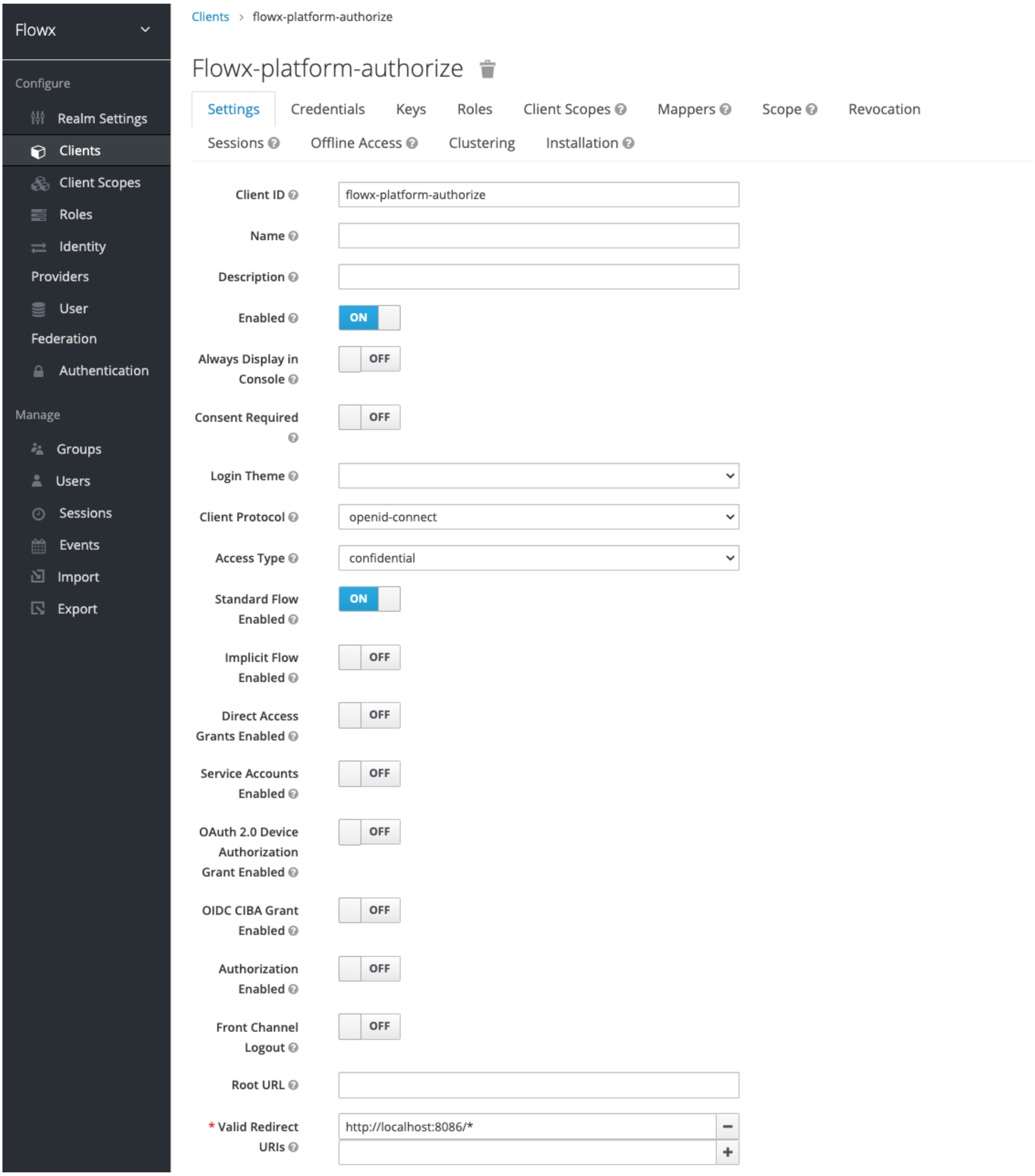
```
curl --location --request GET
'localhost:8080/realms/flowx/protocol/openid-
connect/userinfo' \
--header 'Authorization: Bearer ACCESS_TOKEN' \
```

Authorizing client

Add `{example}-platform-authorize` client - it will be used to authorize rest requests to microservices and Kafka

- set **Client Protocol** to **openid-connect**
- set **Access type** as **confidential**
- disable **Direct Access Grants Enabled** - OFF
- **Valid Redirect URIs -** mandatory
- disable **Backchannel Logout Session Required** - OFF

Once you have configured these settings, the `{example}-platform-authorize` client will be created and can be used to authorize REST requests to microservices and Kafka within your application.



Flowx-platform-authorize

Client ID: flowx-platform-authorize

Name:

Description:

Enabled: ON

Always Display in Console: OFF

Consent Required: OFF

Login Theme:

Client Protocol: openid-connect

Access Type: confidential

Standard Flow Enabled: ON

Implicit Flow Enabled: OFF

Direct Access Grants Enabled: OFF

Service Accounts Enabled: OFF

OAuth 2.0 Device Authorization Grant Enabled: OFF

OIDC CIBA Grant Enabled: OFF

Authorization Enabled: OFF

Front Channel Logout: OFF

Root URL:

* Valid Redirect URIs: http://localhost:8086/*

Minimal auth config for microservices

```
security:
  type: oauth2
  basic:
    enabled: false
  oauth2:
    base-server-url: http://localhost:8080
    realm: flowx
    client:
      access-token-uri: ${security.oauth2.base-server-
url}/realms/${security.oauth2.realm}/protocol/openid-connect/t
      client-id: example-authorize
      client-secret: CLIENT_SECRET
    resource:
      user-info-uri: ${security.oauth2.base-server-
url}/realms/${security.oauth2.realm}/protocol/openid-connect/u
```

Adding service accounts

INFO

What is a service account?

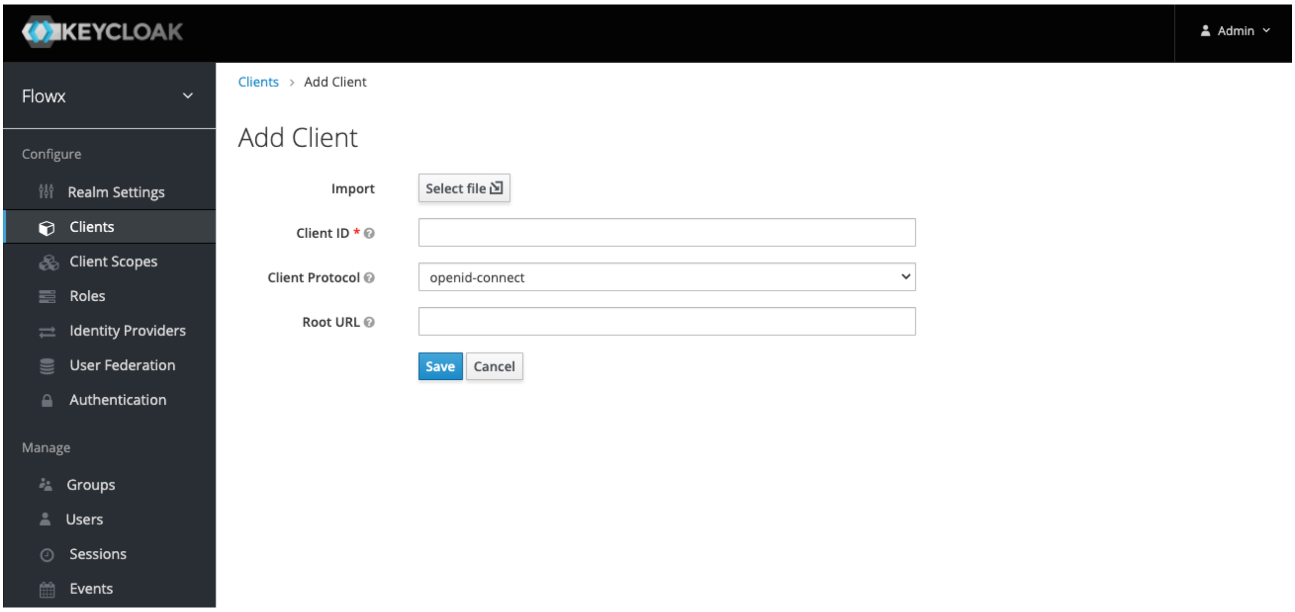
A service account is an account that grants direct access to the Keycloak API for a specific component.

Admin service account

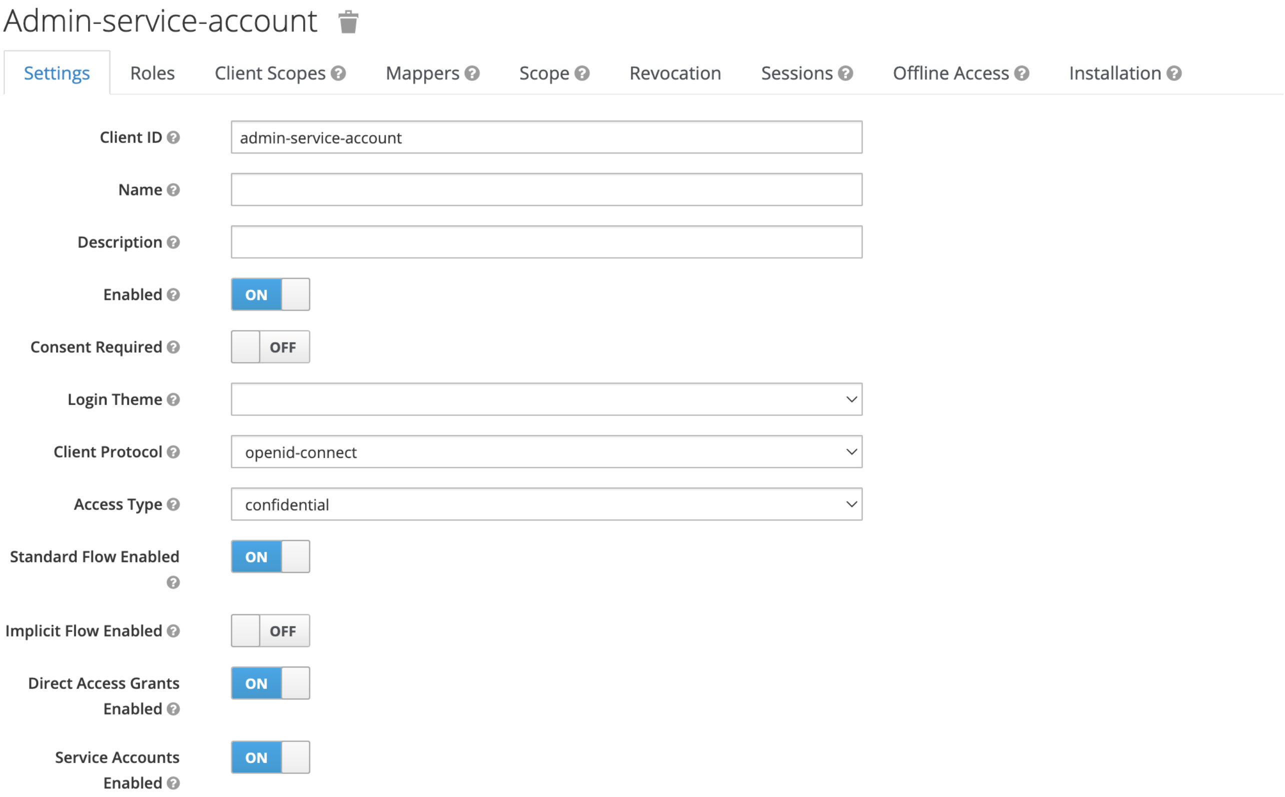
The admin microservice requires an admin service account to make direct calls to the Keycloak API.

Follow these steps to add an **admin service account**:

1. Add a new client by selecting **Clients** then click **Create**.



2. Next, set **Access type** as **confidential** and enable **Service Accounts**.



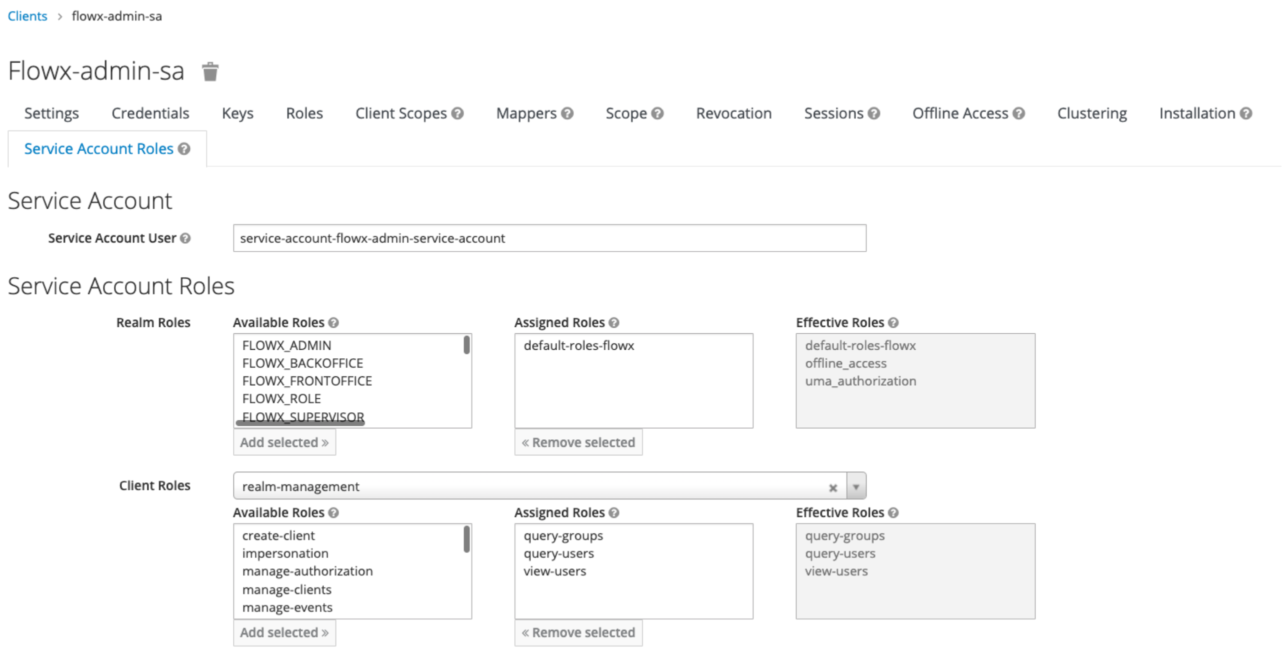
Admin-service-account

Client ID	admin-service-account
Name	
Description	
Enabled	ON
Consent Required	OFF
Login Theme	
Client Protocol	openid-connect
Access Type	confidential
Standard Flow Enabled	ON
Implicit Flow Enabled	OFF
Direct Access Grants Enabled	ON
Service Accounts Enabled	ON

3. Go to **Clients** → **realm-management** → **Roles** and add the following **service account client roles** under **realm-management**:

- **view-users**
- **query-groups**
- **query-users**

4. Assign the necessary **service account roles**:



Flowx-admin-sa

Service Account

Service Account User: service-account-flowx-admin-service-account

Service Account Roles

Realm Roles

Available Roles: FLOWX_ADMIN, FLOWX_BACKOFFICE, FLOWX_FRONTOFFICE, FLOWX_ROLE, FLOWX_SUPERVISOR

Assigned Roles: default-roles-flowx

Effective Roles: default-roles-flowx, offline_access, uma_authorization

Client Roles: realm-management

Available Roles: create-client, impersonation, manage-authorization, manage-clients, manage-events

Assigned Roles: query-groups, query-users, view-users

Effective Roles: query-groups, query-users, view-users

In the provided example, the **admin service account** can have the following assigned roles, depending on the required access scopes:

- **manage-users**
- **query-users**
- **manage-realm**

> **INFO**
>
> The admin service account does not require mappers as it doesn't utilize roles. Service account roles include client roles from the `realm-management`.

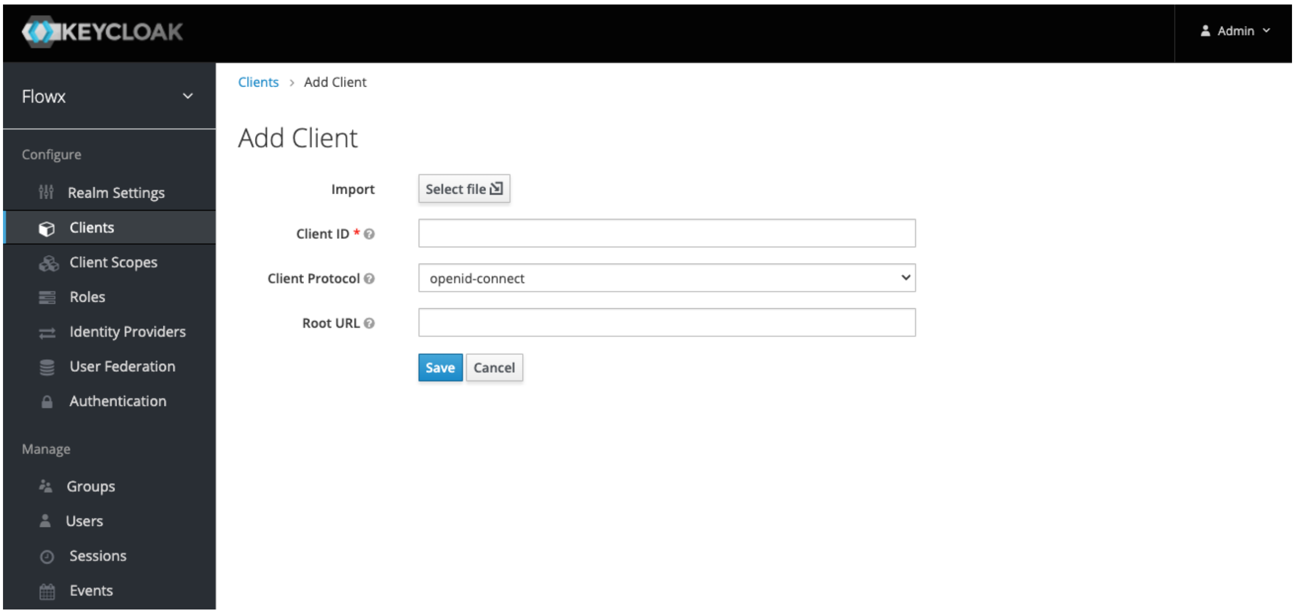
For detailed information, refer to the following section:

» Configuring access rights for admin

Task management service account

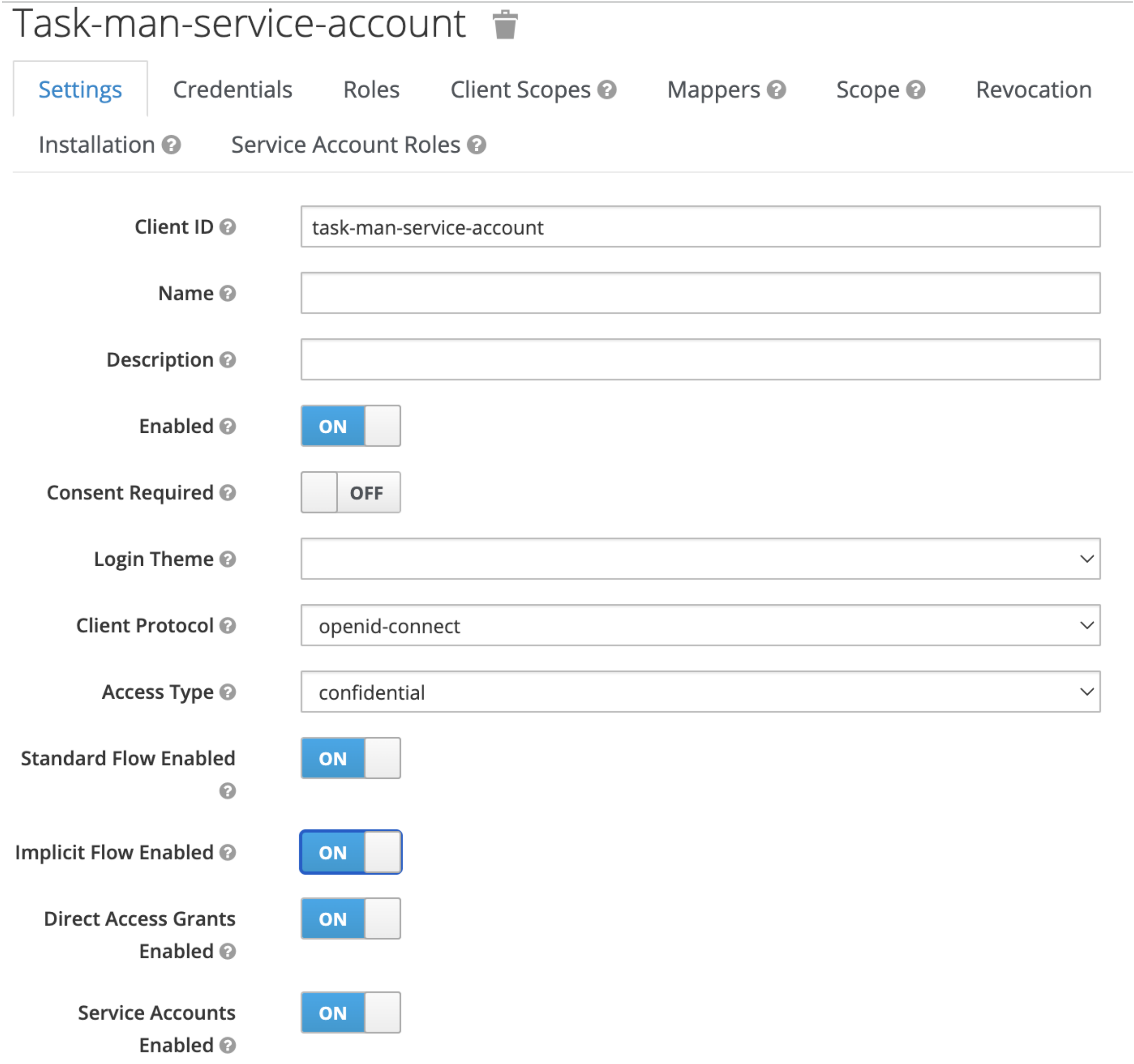
The task management microservice requires a service account to make direct calls to the Keycloak API. Follow these steps to add a task management service account:

1. Add a new client by selecting **Clients** then click **Create**.



2. Next, set the following properties:

- **Access type** - confidential
- **Service Accounts Enabled** - ON



Client ID: task-man-service-account

Name:

Description:

Enabled: ON

Consent Required: OFF

Login Theme:

Client Protocol: openid-connect

Access Type: confidential

Standard Flow Enabled: ON

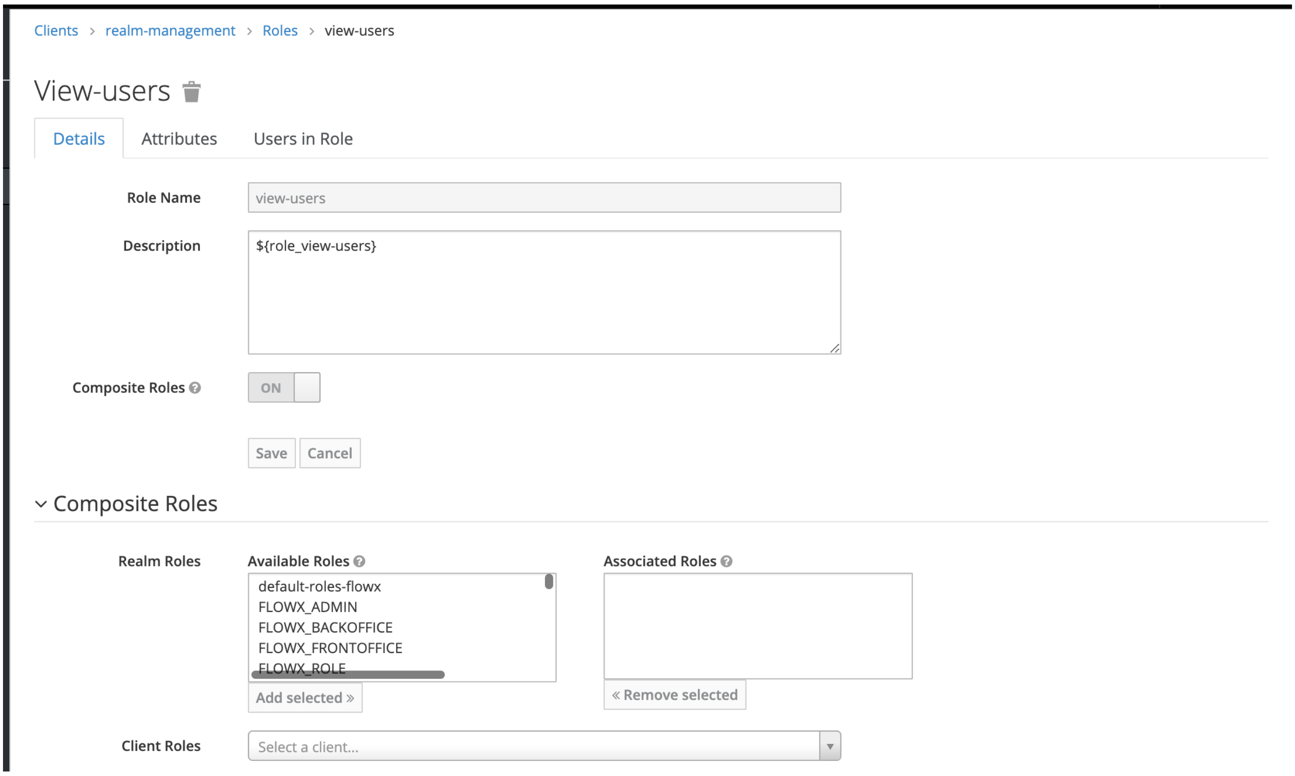
Implicit Flow Enabled: ON

Direct Access Grants Enabled: ON

Service Accounts Enabled: ON

3. Go to **Clients** → **realm-management** → **Roles** and add the following **service account client roles**:

- **view-users**
- **query-groups**
- **query-users**



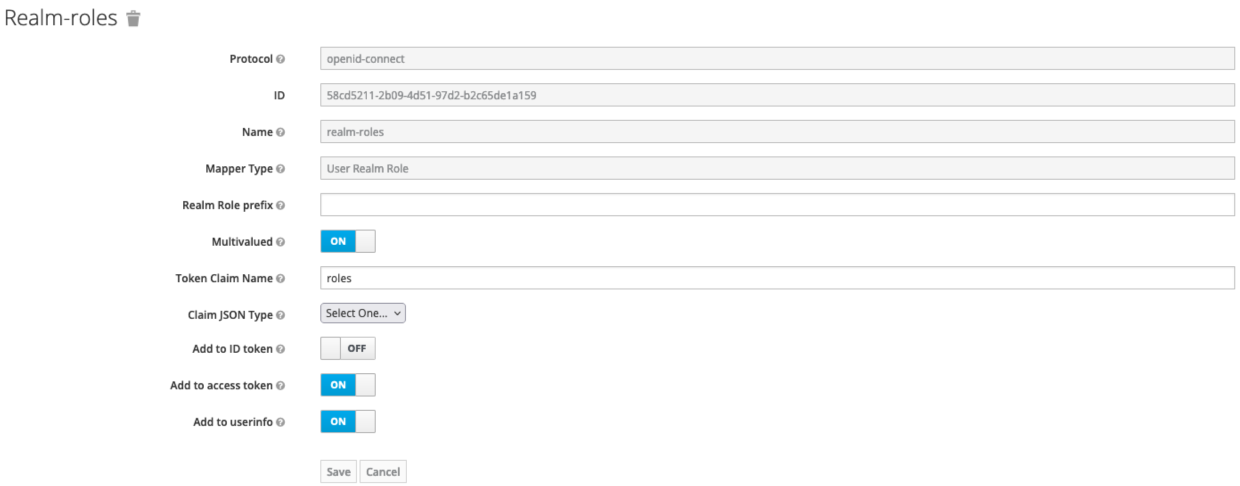
View-users

Role Name	view-users
Description	${role_view-users}
Composite Roles	ON

Composite Roles

	Available Roles	Associated Roles
Realm Roles	default-roles-flowx FLOWX_ADMIN FLOWX_BACKOFFICE FLOWX_FRONTOFFICE FLOWX_ROLE	
Client Roles	Select a client...	

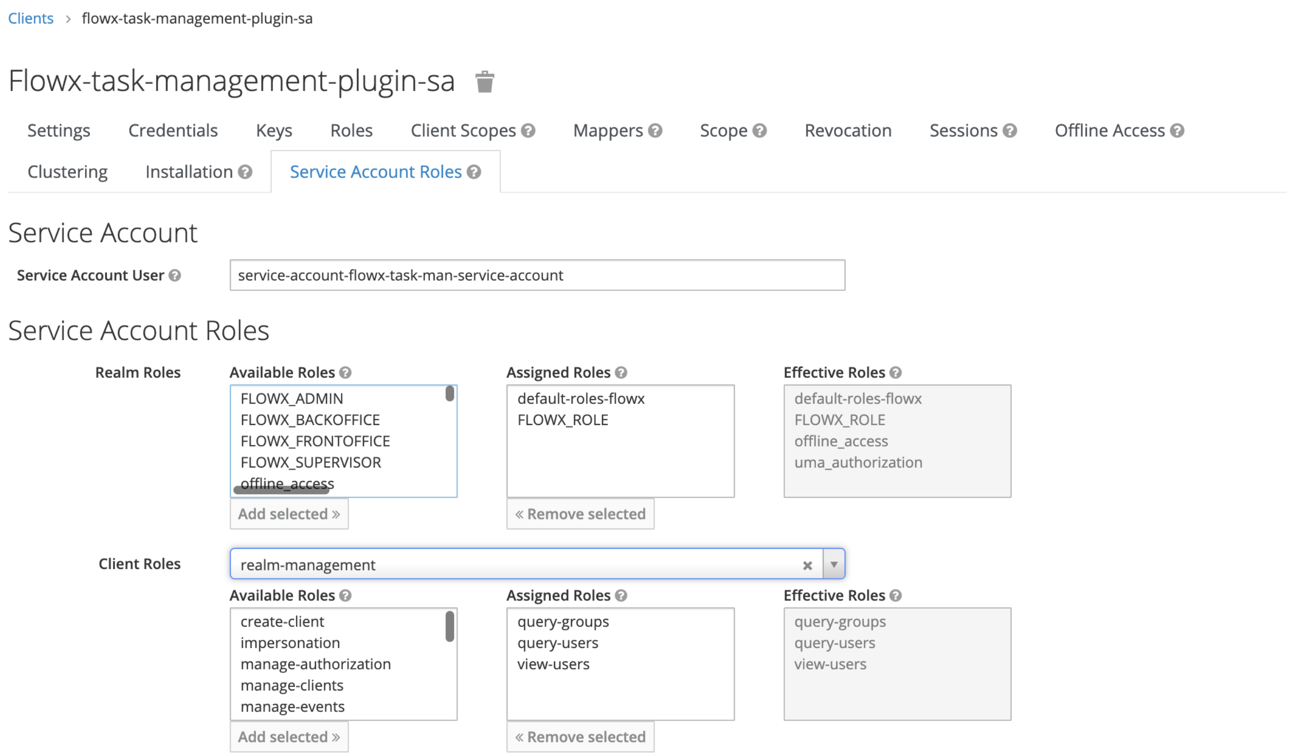
4. Configure a **realm roles mapper**:



Realm-roles

Protocol	openid-connect
ID	58cd5211-2b09-4d51-97d2-b2c65de1a159
Name	realm-roles
Mapper Type	User Realm Role
Realm Role prefix	
Multivalued	ON
Token Claim Name	roles
Claim JSON Type	Select One...
Add to ID token	OFF
Add to access token	ON
Add to userinfo	ON

5. Assign the necessary service account roles, including `FLOWX_ROLE`.



Flowx-task-management-plugin-sa

Service Account

Service Account User: service-account-flowx-task-man-service-account

Service Account Roles

	Available Roles	Assigned Roles	Effective Roles
Realm Roles	FLOWX_ADMIN FLOWX_BACKOFFICE FLOWX_FRONTOFFICE FLOWX_SUPERVISOR offline_access	default-roles-flowx FLOWX_ROLE	default-roles-flowx FLOWX_ROLE offline_access uma_authorization
Client Roles: realm-management	create-client impersonation manage-authorization manage-clients manage-events	query-groups query-users view-users	query-groups query-users view-users

In the provided example, the **task management service account** can have the following assigned roles, depending on the required access scopes:

- **view-users**
- **query-groups**
- **query-users**

For more information, check the following section:

» Configuring access rights for Task Management

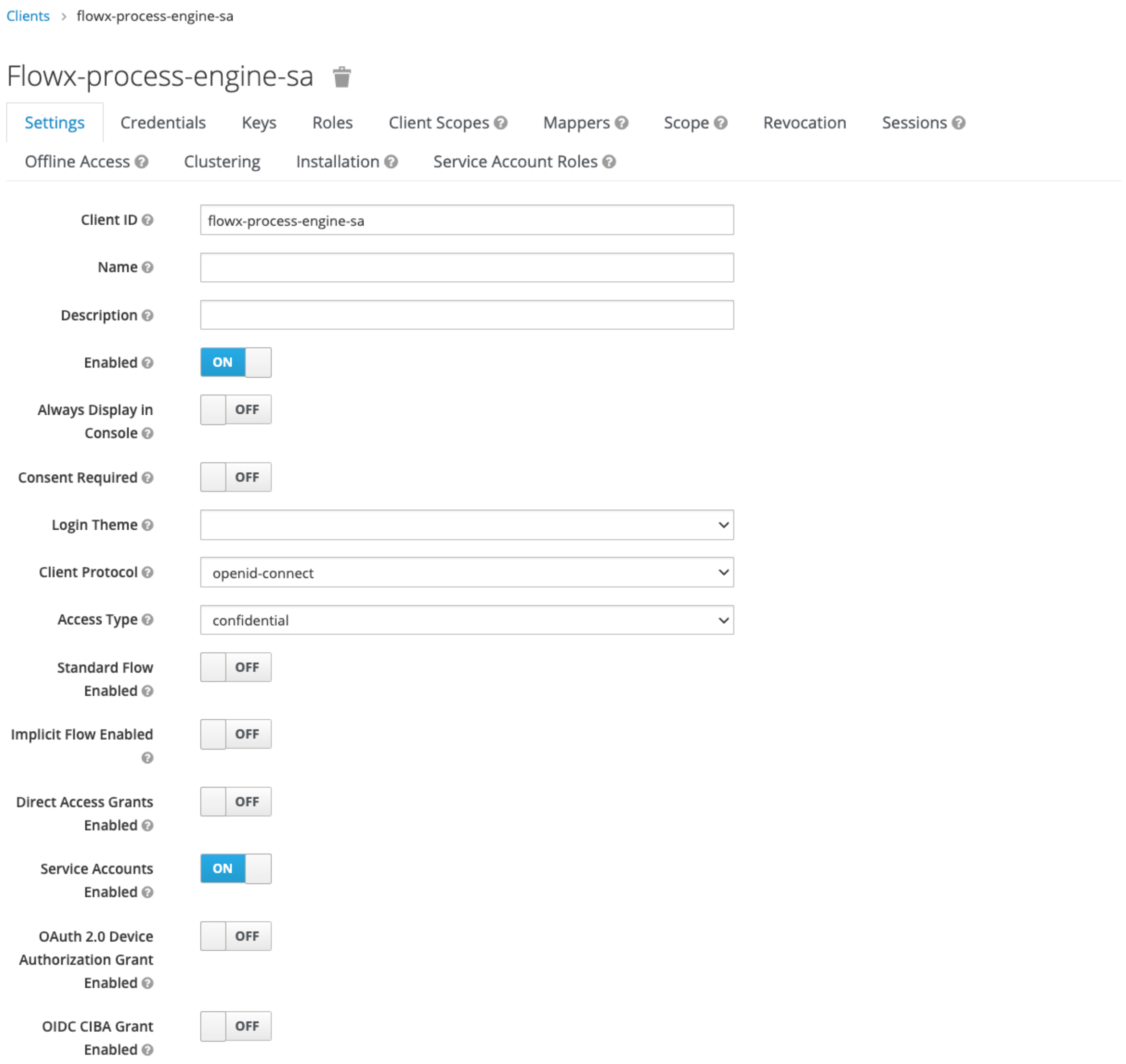
Process engine service account

The process engine requires a process engine service account to make direct calls to the Keycloak API.

> **INFO**
>
> This service account is needed so the use of Start Catch Event node is possible.

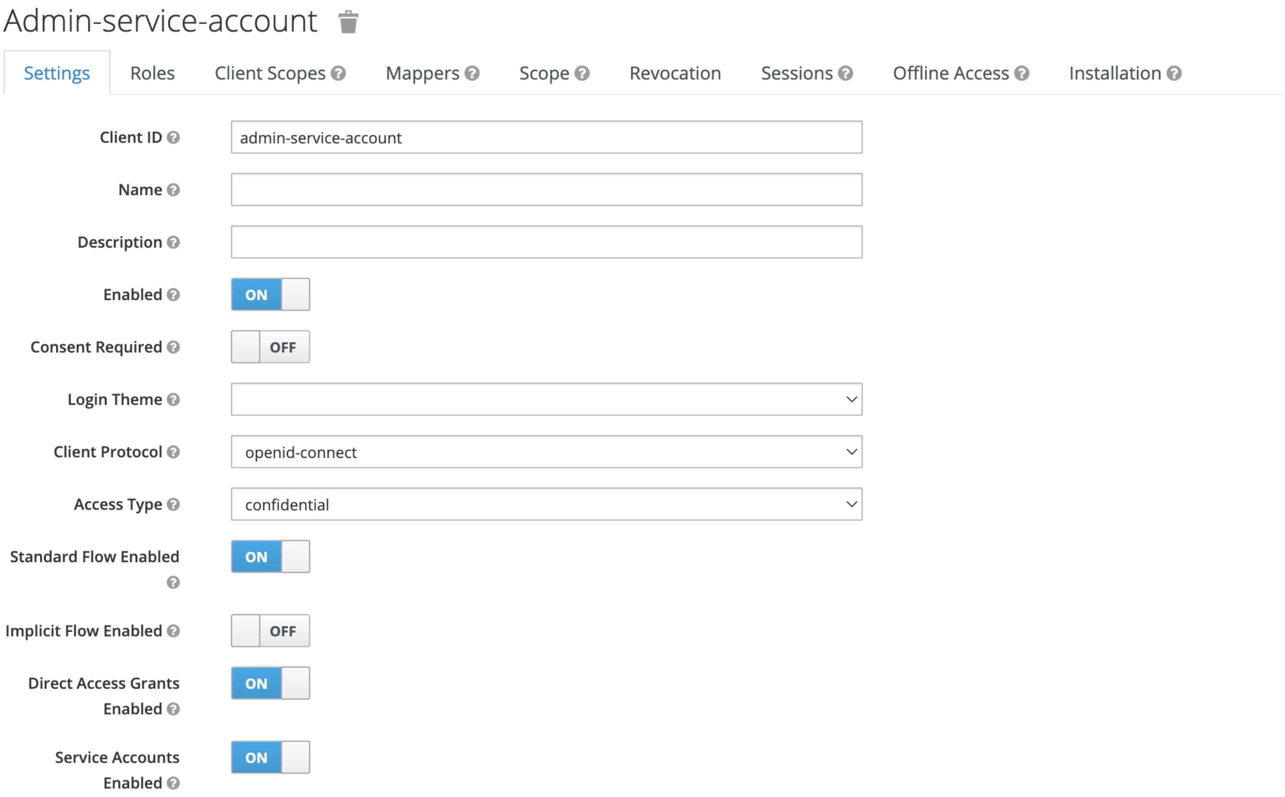
Follow these steps to add a **process engine service account**:

1. Add a new client by selecting **Clients** then click **Create**.



Client ID	flowx-process-engine-sa
Name	
Description	
Enabled	ON
Always Display in Console	OFF
Consent Required	OFF
Login Theme	
Client Protocol	openid-connect
Access Type	confidential
Standard Flow Enabled	OFF
Implicit Flow Enabled	OFF
Direct Access Grants Enabled	OFF
Service Accounts Enabled	ON
OAuth 2.0 Device Authorization Grant Enabled	OFF
OIDC CIBA Grant Enabled	OFF

2. Next, set **Access type** as **confidential** and enable **Service Accounts**.

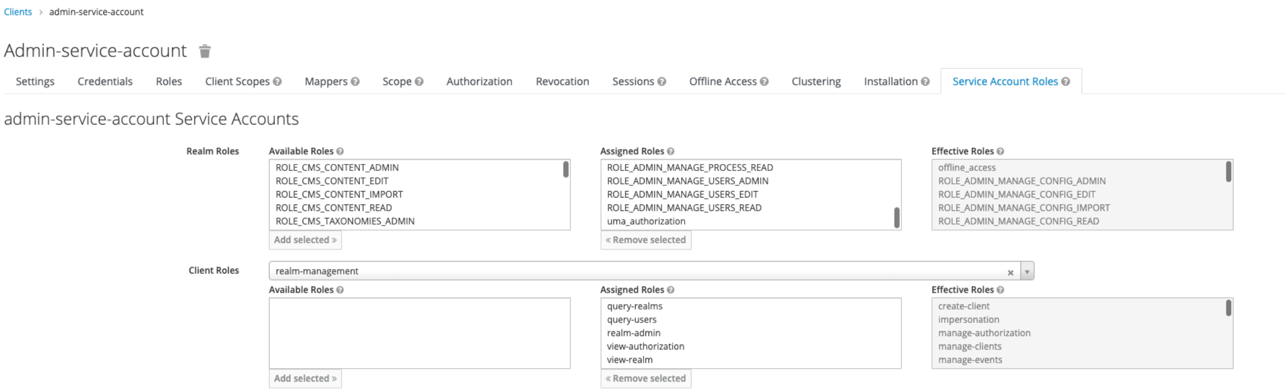


Admin-service-account

Client ID	admin-service-account
Name	
Description	
Enabled	ON
Consent Required	OFF
Login Theme	
Client Protocol	openid-connect
Access Type	confidential
Standard Flow Enabled	ON
Implicit Flow Enabled	OFF
Direct Access Grants Enabled	ON
Service Accounts Enabled	ON

> **INFO**
>
> This service account does not require client roles.

3. Assign the necessary service account roles, including `FLOWX_ROLE`.



Admin-service-account

admin-service-account Service Accounts

Realm Roles

Available Roles:
ROLE_CMS_CONTENT_ADMIN
ROLE_CMS_CONTENT_EDIT
ROLE_CMS_CONTENT_IMPORT
ROLE_CMS_CONTENT_READ
ROLE_CMS_TAXONOMIES_ADMIN

Assigned Roles:
ROLE_ADMIN_MANAGE_PROCESS_READ
ROLE_ADMIN_MANAGE_USERS_ADMIN
ROLE_ADMIN_MANAGE_USERS_EDIT
ROLE_ADMIN_MANAGE_USERS_READ
uma_authorization

Effective Roles:
offline_access
ROLE_ADMIN_MANAGE_CONFIG_ADMIN
ROLE_ADMIN_MANAGE_CONFIG_EDIT
ROLE_ADMIN_MANAGE_CONFIG_IMPORT
ROLE_ADMIN_MANAGE_CONFIG_READ

Client Roles: realm-management

Available Roles

Assigned Roles:
query-realms
query-users
realm-admin
view-authorization
view-realm

Effective Roles:
create-client
impersonation
manage-authorization
manage-clients
manage-events

Was this page helpful?

PLATFORM SETUP GUIDES / Access management / Default roles

Below you can find the list of all the default roles that you can add or import into the Identity and Access Management solution to properly manage the access to all the FLOWX.AI microservices.

Default roles

A complete list of all the default roles based on modules (access scope):

Module	Scopes	Role default value

Module	Scopes	Role default value
manage-platform	read	ROLE_ADMIN_MANAGE_PLATFORM_READ
manage-platform	admin	ROLE_ADMIN_MANAGE_PLATFORM_ADMIN
manage-processes	import	ROLE_ADMIN_MANAGE_PROCESS_IMPORT
manage-processes	read	ROLE_ADMIN_MANAGE_PROCESS_READ
manage-processes	edit	ROLE_ADMIN_MANAGE_PROCESS_EDIT
manage-processes	admin	ROLE_ADMIN_MANAGE_PROCESS_ADMIN
manage-integrations	admin	ROLE_ADMIN_MANAGE_INTEGRATIONS_ADMIN
manage-integrations	read	ROLE_ADMIN_MANAGE_INTEGRATIONS_READ
manage-integrations	edit	ROLE_ADMIN_MANAGE_INTEGRATIONS_EDIT

Module	Scopes	Role default value
manage-integrations	import	ROLE_ADMIN_MANAGE_INTEGRATIONS_IMPOF
manage-configurations	import	ROLE_ADMIN_MANAGE_CONFIG_IMPORT
manage-configurations	read	ROLE_ADMIN_MANAGE_CONFIG_READ
manage-configurations	edit	ROLE_ADMIN_MANAGE_CONFIG_EDIT
manage-configurations	admin	ROLE_ADMIN_MANAGE_CONFIG_ADMIN
manage-users	read	ROLE_ADMIN_MANAGE_USERS_READ
manage-users	edit	ROLE_ADMIN_MANAGE_USERS_EDIT
manage-users	admin	ROLE_ADMIN_MANAGE_USERS_ADMIN
manage-processes	edit	ROLE_ENGINE_MANAGE_PROCESS_EDIT

Module	Scopes	Role default value
manage-processes	admin	ROLE_ENGINE_MANAGE_PROCESS_ADMIN
manage-instances	read	ROLE_ENGINE_MANAGE_INSTANCE_READ
manage-instances	admin	ROLE_ENGINE_MANAGE_INSTANCE_ADMIN
manage-licenses	read	ROLE_LICENSE_MANAGE_READ
manage-licenses	edit	ROLE_LICENSE_MANAGE_EDIT
manage-licenses	admin	ROLE_LICENSE_MANAGE_ADMIN
manage-contents	import	ROLE_CMS_CONTENT_IMPORT
manage-contents	read	ROLE_CMS_CONTENT_READ
manage-contents	edit	ROLE_CMS_CONTENT_EDIT

Module	Scopes	Role default value
manage-contents	admin	ROLE_CMS_CONTENT_ADMIN
manage-media-library	import	ROLE_MEDIA_LIBRARY_IMPORT
manage-media-library	read	ROLE_MEDIA_LIBRARY_READ
manage-media-library	edit	ROLE_MEDIA_LIBRARY_EDIT
manage-media-library	admin	ROLE_MEDIA_LIBRARY_ADMIN
manage-taxonomies	import	ROLE_CMS_TAXONOMIES_IMPORT
manage-taxonomies	read	ROLE_CMS_TAXONOMIES_READ
manage-taxonomies	edit	ROLE_CMS_TAXONOMIES_EDIT
manage-taxonomies	admin	ROLE_CMS_TAXONOMIES_ADMIN

Module	Scopes	Role default value
manage-tasks	read	ROLE_TASK_MANAGER_TASKS_READ
manage-hooks	import	ROLE_TASK_MANAGER_HOOKS_IMPORT
manage-hooks	read	ROLE_TASK_MANAGER_HOOKS_READ
manage-hooks	edit	ROLE_TASK_MANAGER_HOOKS_EDIT
manage-hooks	admin	ROLE_TASK_MANAGER_HOOKS_ADMIN
manage-process-allocation-settings	import	ROLE_TASK_MANAGER_PROCESS_ALLOCATIO
manage-process-allocation-settings	read	ROLE_TASK_MANAGER_PROCESS_ALLOCATIO

Module	Scopes	Role default value
manage-process-allocation-settings	edit	ROLE_TASK_MANAGER_PROCESS_ALLOCATIO
manage-process-allocation-settings	admin	ROLE_TASK_MANAGER_PROCESS_ALLOCATIO
manage-out-of-office-users	import	ROLE_TASK_MANAGER_OOO_IMPORT
manage-out-of-office-users	read	ROLE_TASK_MANAGER_OOO_READ
manage-out-of-office-users	edit	ROLE_TASK_MANAGER_OOO_EDIT
manage-out-of-office-users	admin	ROLE_TASK_MANAGER_OOO_ADMIN

Module	Scopes	Role default value
manage-notification-templates	import	ROLE_NOTIFICATION_TEMPLATES_IMPORT
manage-notification-templates	read	ROLE_NOTIFICATION_TEMPLATES_READ
manage-notification-templates	edit	ROLE_NOTIFICATION_TEMPLATES_EDIT
manage-notification-templates	admin	ROLE_NOTIFICATION_TEMPLATES_ADMIN
manage-notifications	import	ROLE_MANAGE_NOTIFICATIONS_IMPORT
manage-notifications	read	ROLE_MANAGE_NOTIFICATIONS_READ
manage-notifications	edit	ROLE_MANAGE_NOTIFICATIONS_EDIT

Module	Scopes	Role default value
manage-notifications	admin	ROLE_MANAGE_NOTIFICATIONS_ADMIN
manage-document-templates	import	ROLE_DOCUMENT_TEMPLATES_IMPORT
manage-document-templates	read	ROLE_DOCUMENT_TEMPLATES_READ
manage-document-templates	edit	ROLE_DOCUMENT_TEMPLATES_EDIT
manage-document-templates	admin	ROLE_DOCUMENT_TEMPLATES_ADMIN

Importing roles

> ⓘ **INFO**
>
> You can import a super admin group and its default roles in Keycloak using the following script file.

ⓘ **DOWNLOAD THE SCRIPT + ROLES:**

Import Script

You need to edit the following script parameters:

- `baseAuthUrl`
- `username`
- `password`
- `realm`
- `the name of the group for super admins`

The requests package is needed in order to run the script. It can be installed with the following command:

```
pip3 install requests
```

The script can be run with the following command:

```
python3 importUsers.py
```

Was this page helpful?