

Institute of Computer Technology

B. Tech Computer Science and Engineering

Sub: Identity and Access Management (2CSE507)

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Branch - Cyber Security

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Semester - 5

Class - A

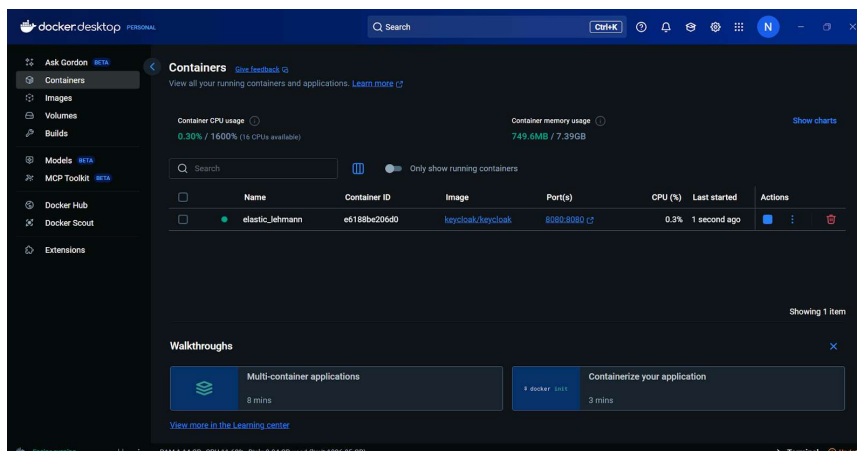
Batch – 52

PRACTICAL NO:- 4

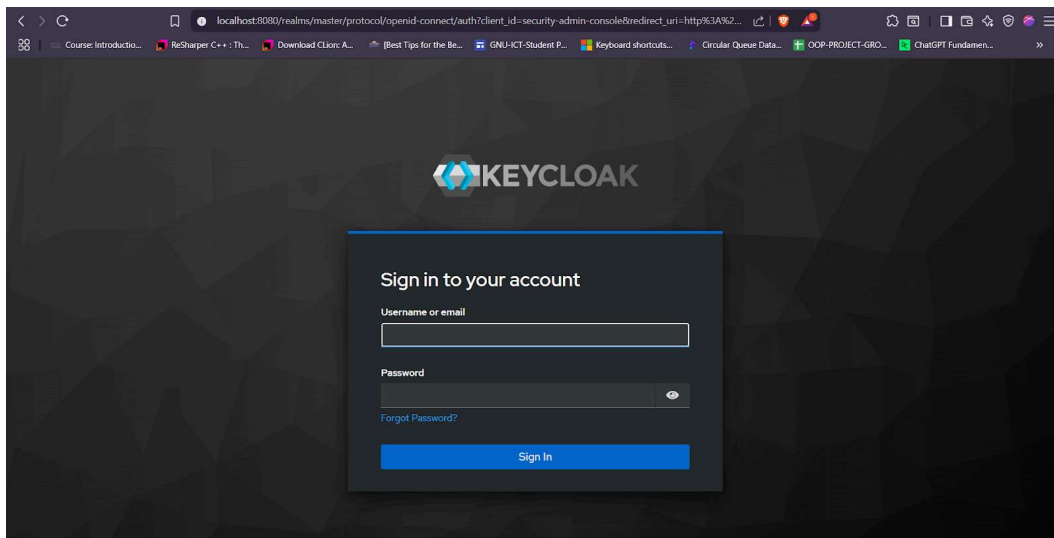
Aim : Creating and assigning Roles to users, Event Logging and Managing Sessions

Starting the Container:

- Open your Docker Desktop.
- In the containers tab, click the start button of the container you want to start.

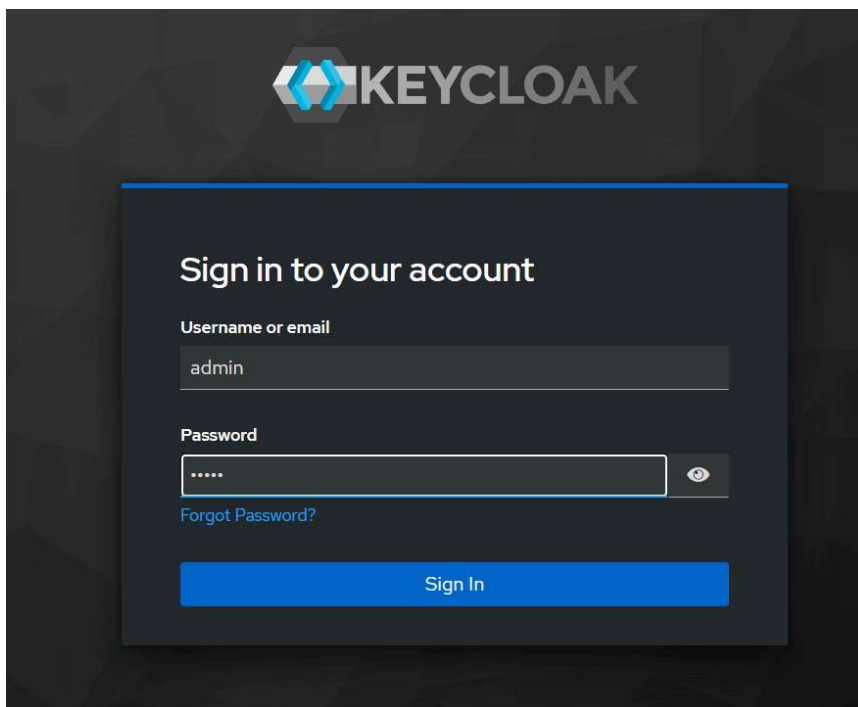


- Now open your browser and go to '<http://localhost:8080/>'.

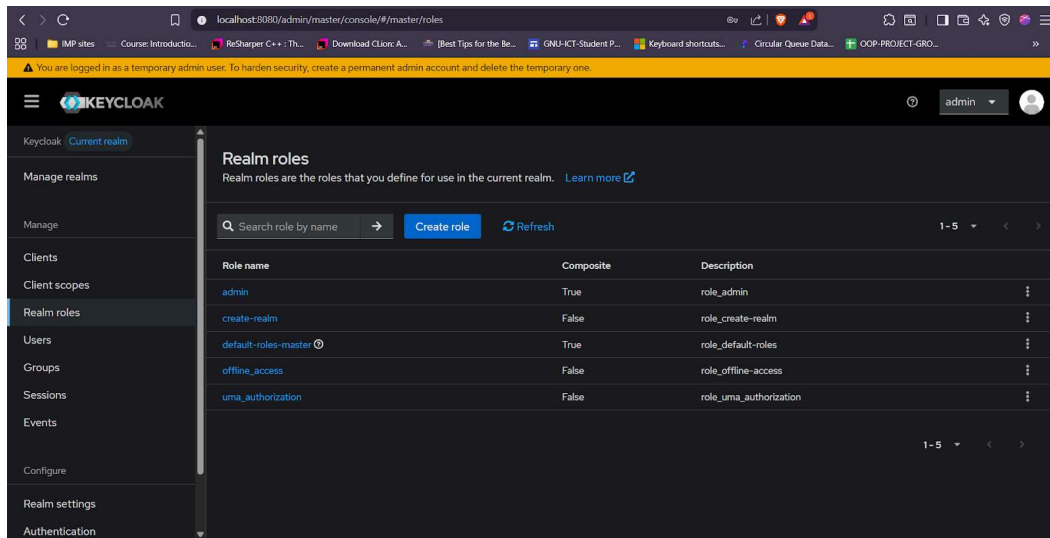


Creating a new Realm role:

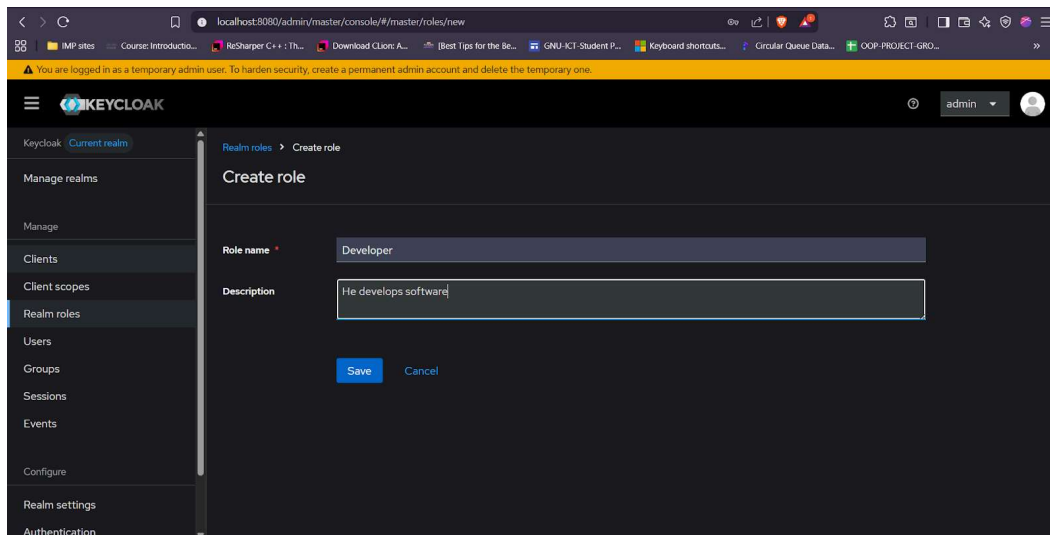
- Login as admin.

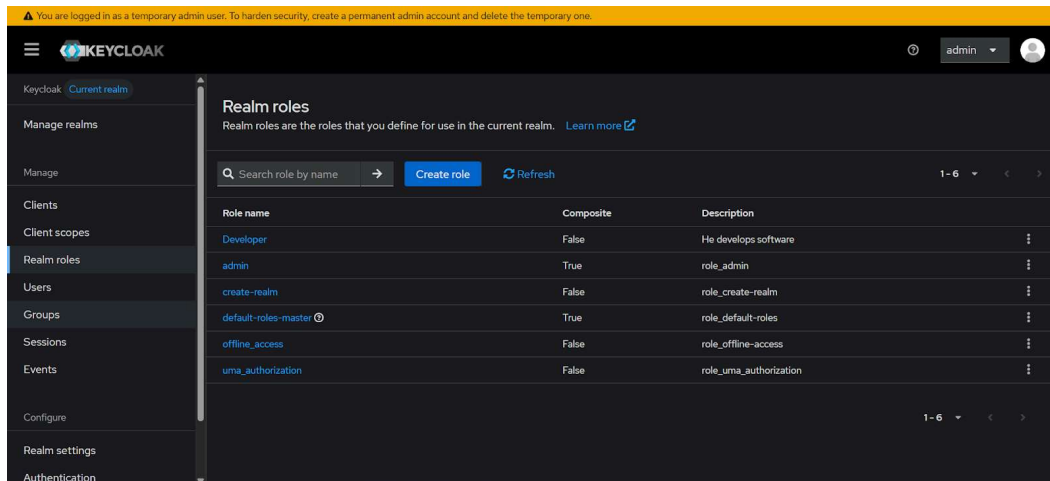


- Go to the 'Realm roles' tab and click on 'Create role'.



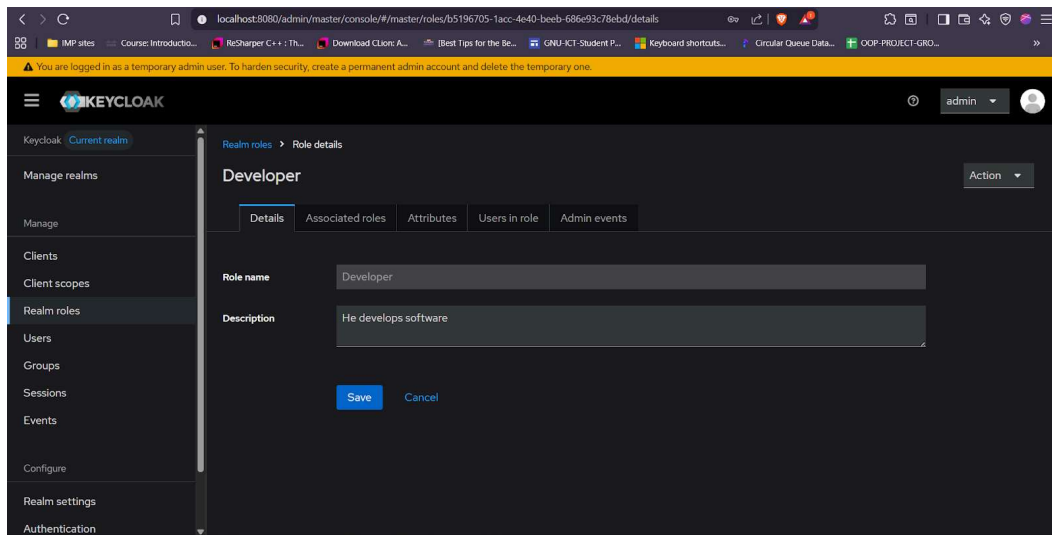
- Enter role name and role description (optional) and save the role





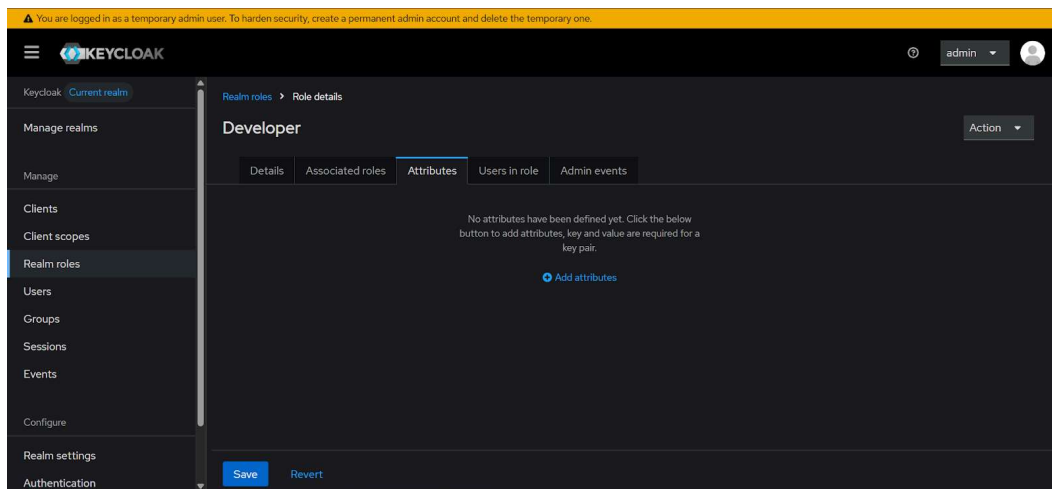
Updating Role Details:

- Go to the 'Realm roles' tab.
- Click on the role, whose details you want to change.
- You will find following subtabs :
 - Details : Displays and allows editing of the role's basic information — name, description, and whether it's a composite role.
 - Associated roles : If the role is composite, this lists other roles included within it. Assigning this role to a user automatically grants all associated roles.
 - Attributes : Lets you add custom key-value metadata for the role (e.g., department, permission scope). Useful for custom logic in applications.
 - Users in role : Lists all users who currently have this role assigned (directly or indirectly through groups or composite roles).
 - Admin events : Shows an audit log of administrative actions related to this role (creation, updates, deletions, assignments).

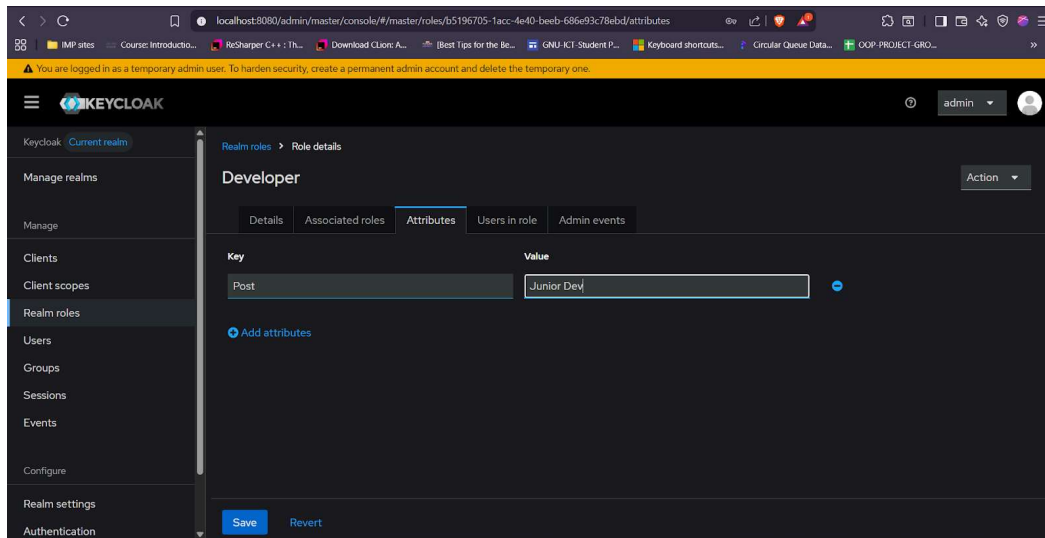


Adding Attribute to a role:

- Go to the 'Realm roles' tab.
- Click on the role, whom you want to assign attributes.
- Go to attribute tab and Click on 'Add attribute'



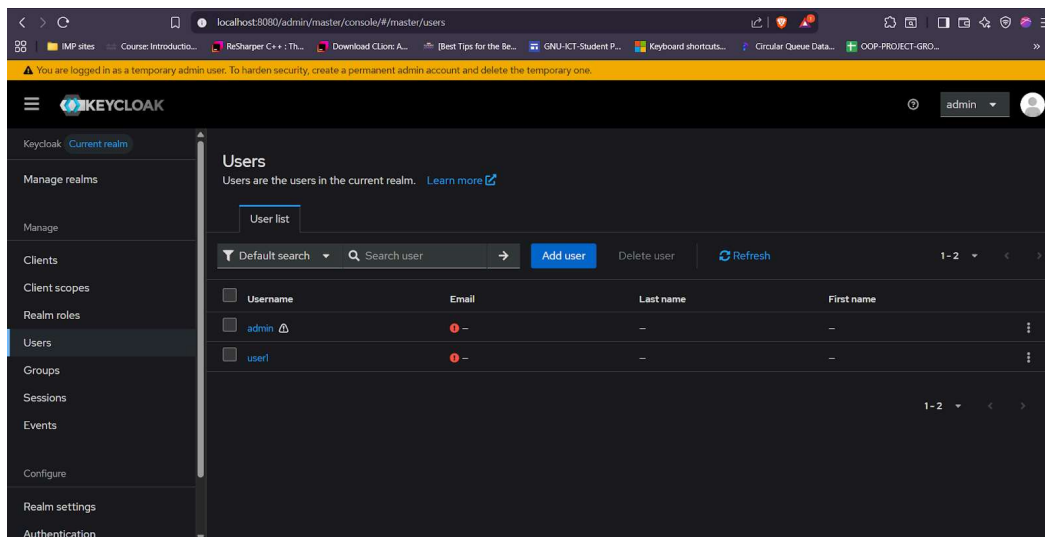
- Enter keys and values of attributes you want to assign to a role



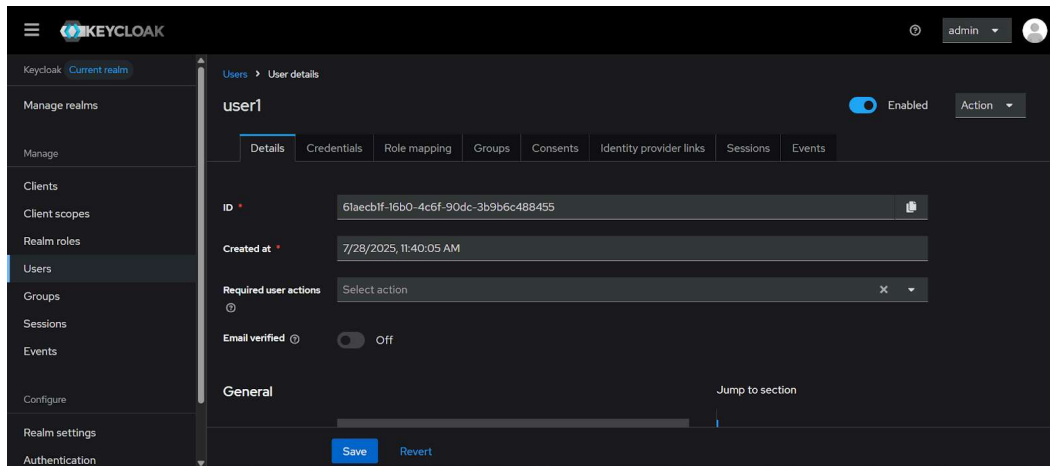
- Now, click on save to apply the changes.

Assigning the role to a user:

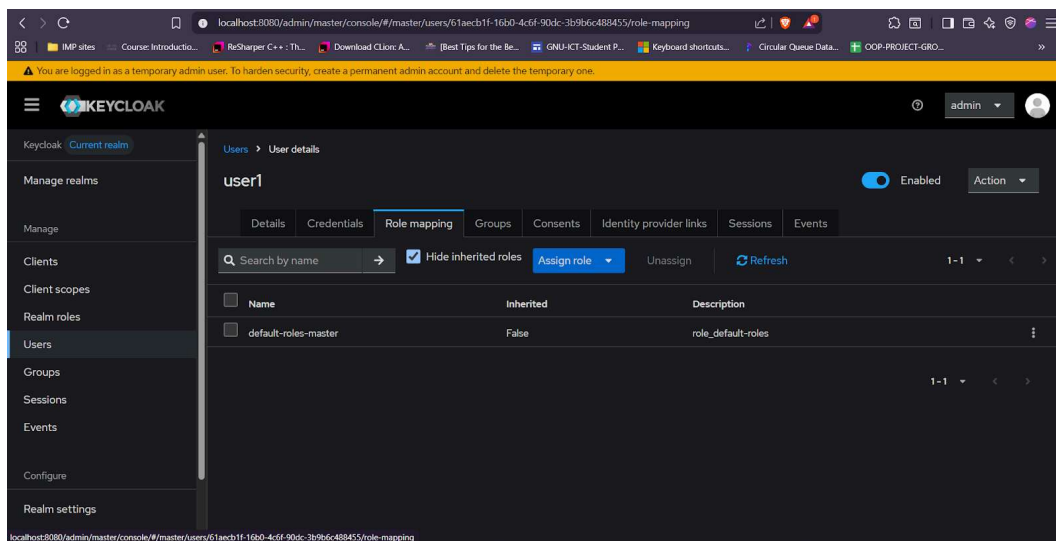
- Go to the user tab.



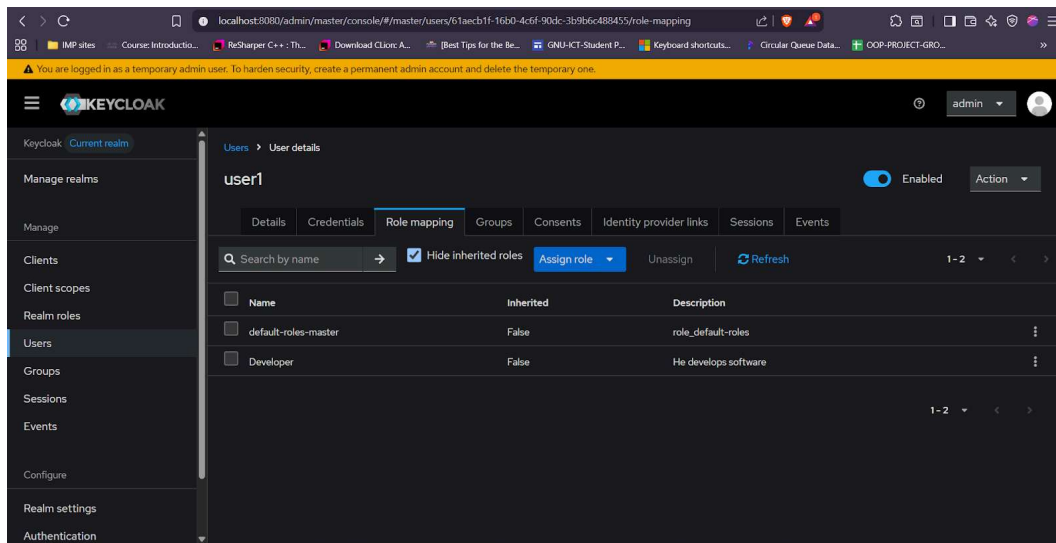
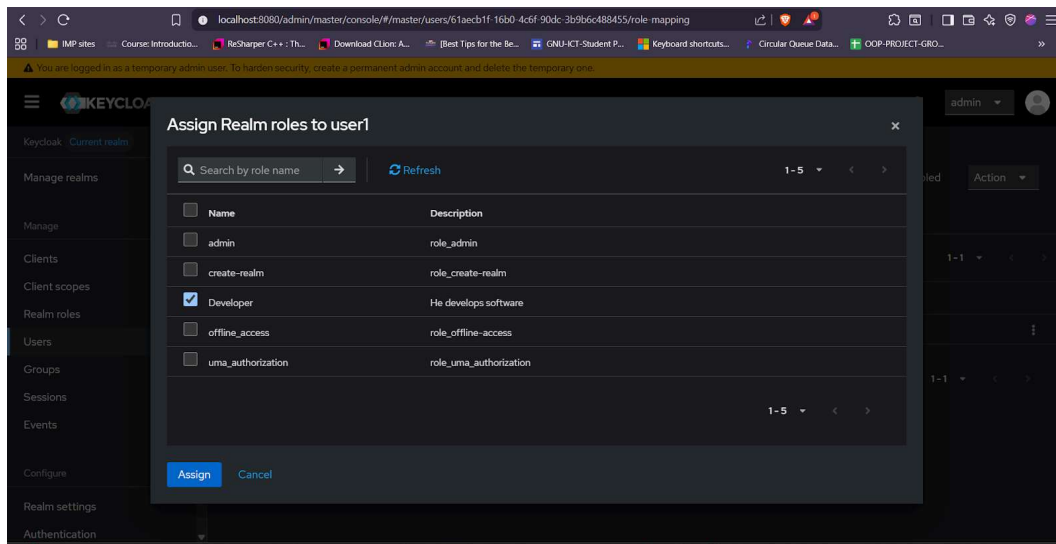
- Click on the user, to whom you want to assign the role.



- Go to the 'Role mapping' tab.

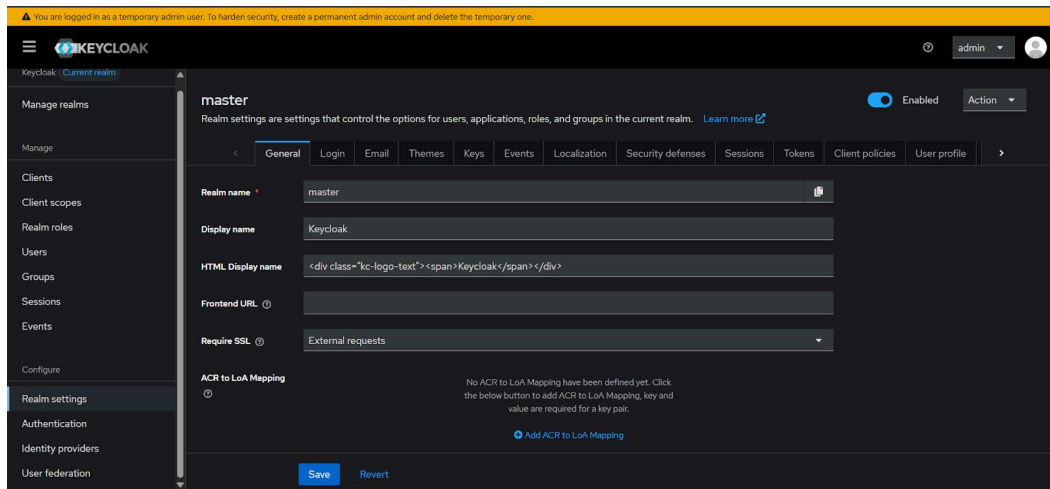


- Click on 'Assign role', select the role(s) you want to assign to the user and click on 'Assign'.

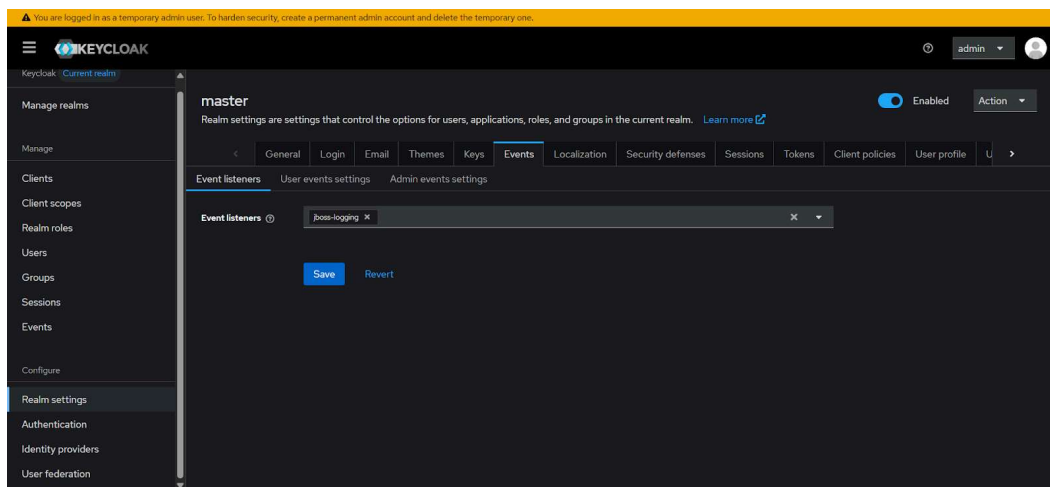


Event Logging:

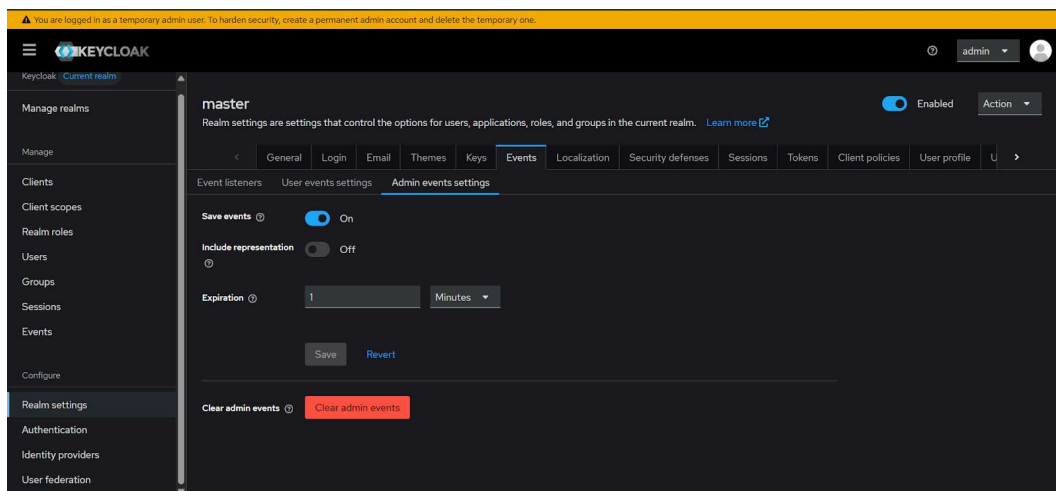
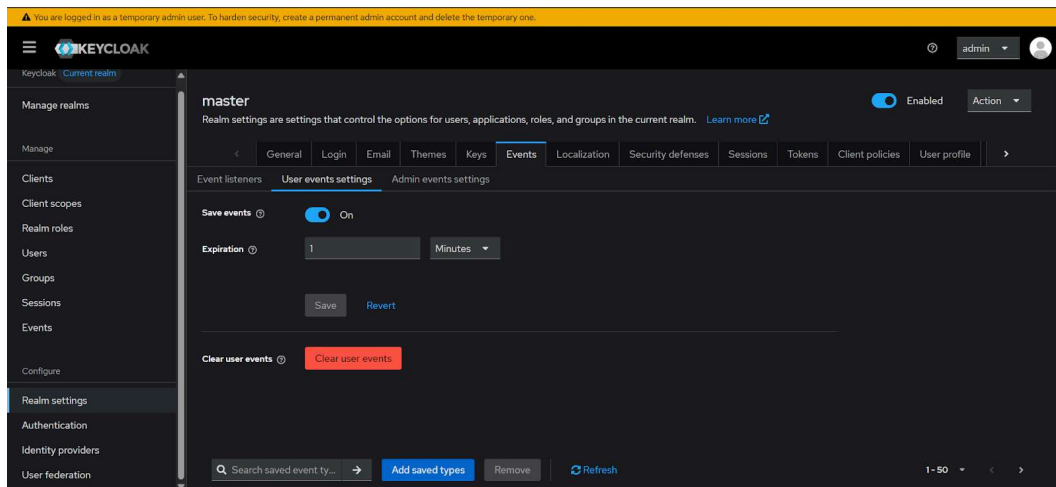
- Go to the ‘Realm settings’ tab.



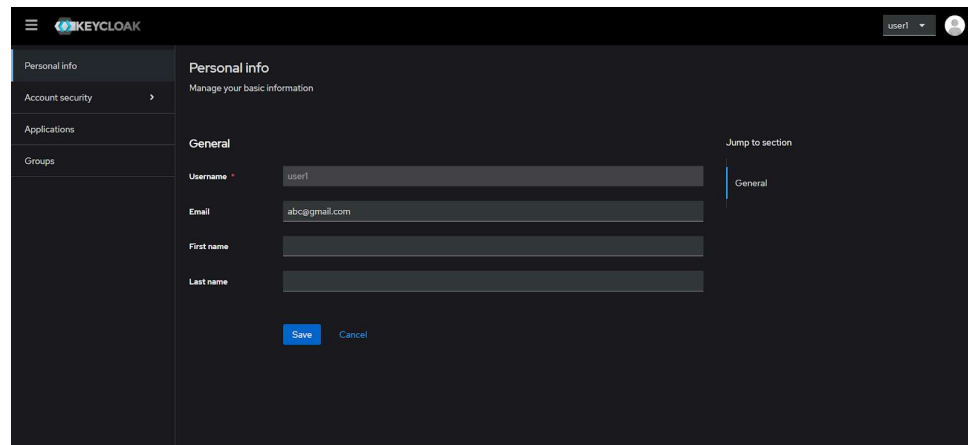
- Go to the ‘Events’ subtab.



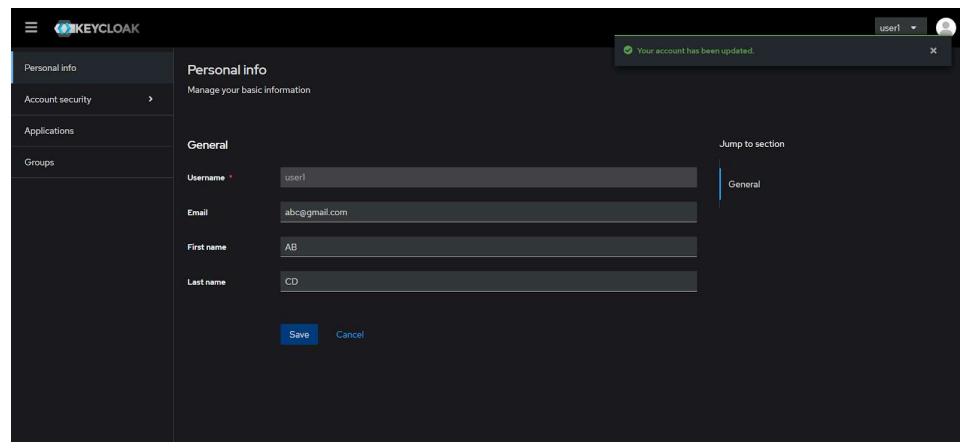
- In ‘user events settings’ turn on ‘Save events’ and same in ‘admin events settings’.



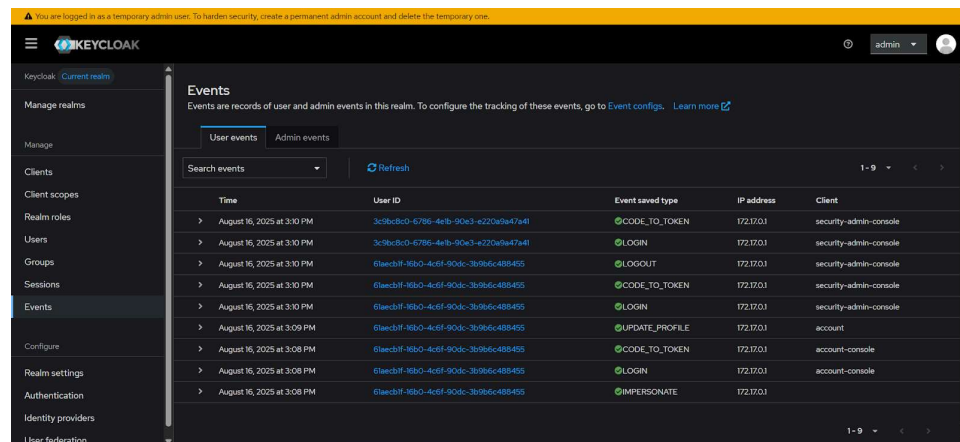
- Checking User Events:
 - Updating User data as the user



The screenshot shows the Keycloak 'Personal info' page for a user named 'user1'. The page has a dark theme. On the left is a sidebar with navigation links: Personal info, Account security, Applications, and Groups. The main content area is titled 'Personal info' and 'Manage your basic information'. It contains a 'General' section with input fields for Username (filled with 'user1'), Email (filled with 'abc@gmail.com'), First name, and Last name. There are 'Save' and 'Cancel' buttons at the bottom. A 'Jump to section' dropdown is on the right, currently set to 'General'.



This screenshot shows the same 'Personal info' page after an update. A green notification banner at the top right says 'Your account has been updated.' The 'First name' field is now filled with 'AB' and the 'Last name' field is filled with 'CD'. The 'Save' and 'Cancel' buttons remain at the bottom.



The screenshot shows the Keycloak 'Events' page. At the top, a yellow warning banner states: 'You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.' The page has a sidebar with navigation links: Keycloak, Current realm, Manage realms, Manage, Clients, Client scopes, Realm roles, Users, Groups, Sessions, Events (selected), Configure, Realm settings, Authentication, Identity providers, and User federation. The main content area is titled 'Events' and 'Events are records of user and admin events in this realm. To configure the tracking of these events, go to [Event configs](#). [Learn more](#)'. There are tabs for 'User events' and 'Admin events'. Below the tabs is a 'Search events' dropdown and a 'Refresh' button. A table displays the event logs with columns: Time, User ID, Event saved type, IP address, and Client. The table shows 9 events, with the first 6 visible in the screenshot.

Time	User ID	Event saved type	IP address	Client
> August 16, 2025 at 3:10 PM	3c98c8d0-6786-4efb-90a3-e220a8a47a4f	@CODE_TO_TOKEN	172.17.0.1	security-admin-console
> August 16, 2025 at 3:10 PM	3c98c8d0-6786-4efb-90a3-e220a8a47a4f	@LOGIN	172.17.0.1	security-admin-console
> August 16, 2025 at 3:10 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@LOGOUT	172.17.0.1	security-admin-console
> August 16, 2025 at 3:10 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@CODE_TO_TOKEN	172.17.0.1	security-admin-console
> August 16, 2025 at 3:10 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@LOGIN	172.17.0.1	security-admin-console
> August 16, 2025 at 3:09 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@UPDATE_PROFILE	172.17.0.1	account
> August 16, 2025 at 3:08 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@CODE_TO_TOKEN	172.17.0.1	account-console
> August 16, 2025 at 3:08 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@LOGIN	172.17.0.1	account-console
> August 16, 2025 at 3:08 PM	6baecbf1-46b0-4c6f-90dc-3b9b6c488495	@IMPERSONATE	172.17.0.1	

- Checking Admin Events:
 - Updating User data as an admin

⚠ You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

KEYCLOAK

The user has been saved

Keycloak Current realm

Manage realms

Manage

Clients

Client scopes

Realm roles

Users

Groups

Sessions

Events

Configure

Realm settings

Authentication

Identity providers

User federation

ID: 6laecbf1-16b0-4c6f-90dc-3b9b6c488455

Created at: 7/28/2025, 11:40:05 AM

Required user actions: Select action

Email verified: Off

General

Username: user1

Email: abc@gmail.com

First name

Last name

Jump to section

General

Save Revert

Events related to an user

⚠ You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

KEYCLOAK

admin

Keycloak Current realm

Manage realms

Manage

Clients

Client scopes

Realm roles

Users

Groups

Sessions

Events

Configure

Realm settings

Authentication

Identity providers

User federation

Users > User details

user1

Enabled Action

Details Credentials Role mapping Groups Consents Identity provider links Sessions Events

User events Admin events

Search admin event Refresh

Time	Resource path	Resource	Operation type	User
August 16, 2025 at 3:05 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	USER	UPDATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41

1-1

All events performed in the realm

⚠ You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

KEYCLOAK

admin

Keycloak Current realm

Manage realms

Manage

Clients

Client scopes

Realm roles

Users

Groups

Sessions

Events

Configure

Realm settings

Authentication

Identity providers

User federation

Events

Events are records of user and admin events in this realm. To configure the tracking of these events, go to [Event configs](#). [Learn more](#)

User events Admin events

Search admin event Refresh

Time	Resource path	Resource type	Operation type	User
August 16, 2025 at 3:06 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41
August 16, 2025 at 3:06 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41
August 16, 2025 at 3:06 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41
August 16, 2025 at 3:06 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41
August 16, 2025 at 3:06 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41
August 16, 2025 at 3:05 PM	users/6laecbf1-16b0-4c6f-90dc-3b9b6c48...	USER	UPDATE	3c9bc8c0-6786-4eb-90e3-e220a9a47a41

1-6

○ Creating and Deleting an user

⚠ You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

KEYCLOAK

admin

Keycloak Current realm

Manage realms

Manage

Clients

Client scopes

Realm roles

Users

Groups

Sessions

Events

Configure

Realm settings

Authentication

Identity providers

User federation

Create user

Required user actions

Email verified ☐ Off

General

Jump to section

Username

Email

First name

Last name

Groups

⚠ You are logged in as a temporary admin user. To harden security, create a permanent admin account and delete the temporary one.

KEYCLOAK

admin

Keycloak Current realm

Manage realms

Manage

Clients

Client scopes

Realm roles

Users

Groups

Sessions

Events

Configure

Realm settings

Authentication

Identity providers

User federation

Users

Users are the users in the current realm. [Learn more](#)

User list

Default search

<input type="checkbox"/>	Username	Email	Last name	First name	
<input checked="" type="checkbox"/>	admin				
<input type="checkbox"/>	user1	abc@gmail.com	CD	AB	
<input type="checkbox"/>	user2				

1-3

⚠ You are logged in as a temporary admin user. To harden security, create a permanent admin user and delete the temporary one.

KEYCLOAK

admin

Keycloak Current realm

Manage realms

Manage

Clients

Client scopes

Realm roles

Users

Groups

Sessions

Events

Configure

Realm settings

Authentication

Identity providers

User federation

Events

Events are records of user and admin events in this realm. To configure the tracking of these events, go to [Event configs](#). [Learn more](#)

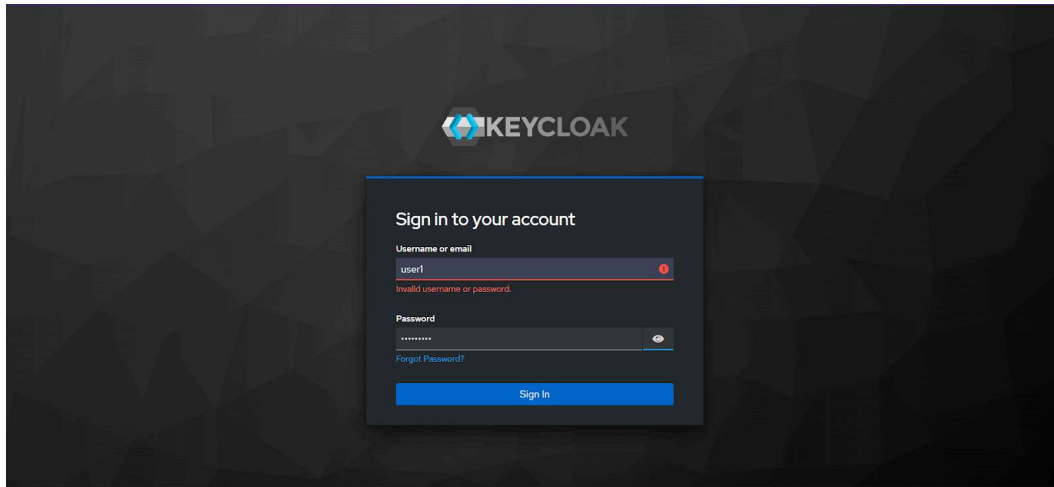
User events Admin events

Search admin event

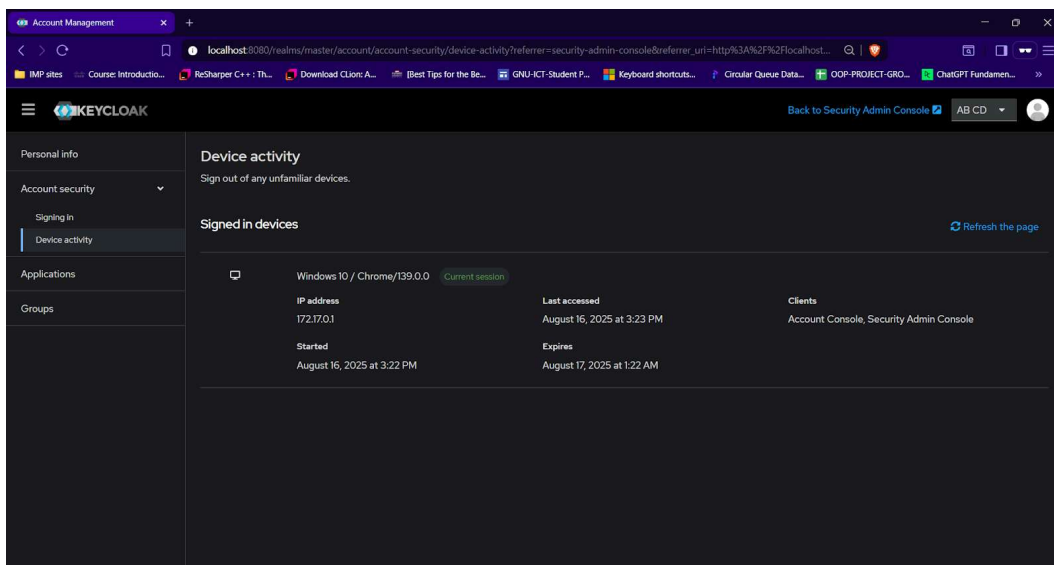
Time	Resource path	Resource type	Operation type	User
August 16, 2025 at 3:12 PM	users/7835078a-f68a-4b75-942e-0d78e4a2...	USER	DELETE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:12 PM	users/7835078a-f68a-4b75-942e-0d78e4a2...	USER	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:11 PM	users/1856391-6fcd-4bcb-8eb8-7b4481b4...	USER	DELETE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:11 PM	users/1856391-6fcd-4bcb-8eb8-7b4481b4...	USER	UPDATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:11 PM	users/1856391-6fcd-4bcb-8eb8-7b4481b4...	USER	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:06 PM	users/61aecd1f-9b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:06 PM	users/61aecd1f-9b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:06 PM	users/61aecd1f-9b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:06 PM	users/61aecd1f-9b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:06 PM	users/61aecd1f-9b0-4c6f-90dc-3b9b6c48...	CLIENT_ROLE_MAPPING	CREATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41
August 16, 2025 at 3:05 PM	users/61aecd1f-9b0-4c6f-90dc-3b9b6c48...	USER	UPDATE	3c9bc8c0-6786-4e1b-90e3-e220a9a47e41

Viewing Session:

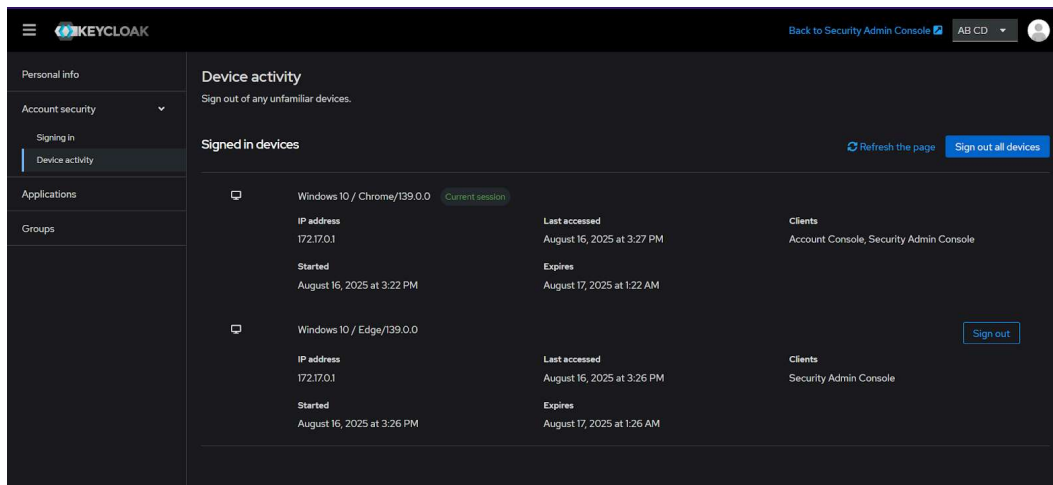
- Login as the user in another browser.



- .Go to device activity tab in Account activity, You will be able to all current ongoing sessions of the user.



- Now go back to the other browser and impersonate the user and go to device activity. Now you will see the current session added in the list.



- As admin, you can also see all current active session of any user from session tab in the user details page

