

# Learner's Guide to Users Roles

---

## USE THE CONFIG SYSTEM TO FOLLOW THIS GUIDE

### What is this guide?

This guide contains all ungraded exercises and detailed steps to perform them related to the creation of a tracker program for the Tracker Config Level 1 academy. Please perform each of the exercises when prompted by your instructors within the **CONFIG** system.

### Learning objectives for this session

- Describe the individual concepts that make up a user
- Configure these concepts in DHIS2
- Create a user in DHIS2

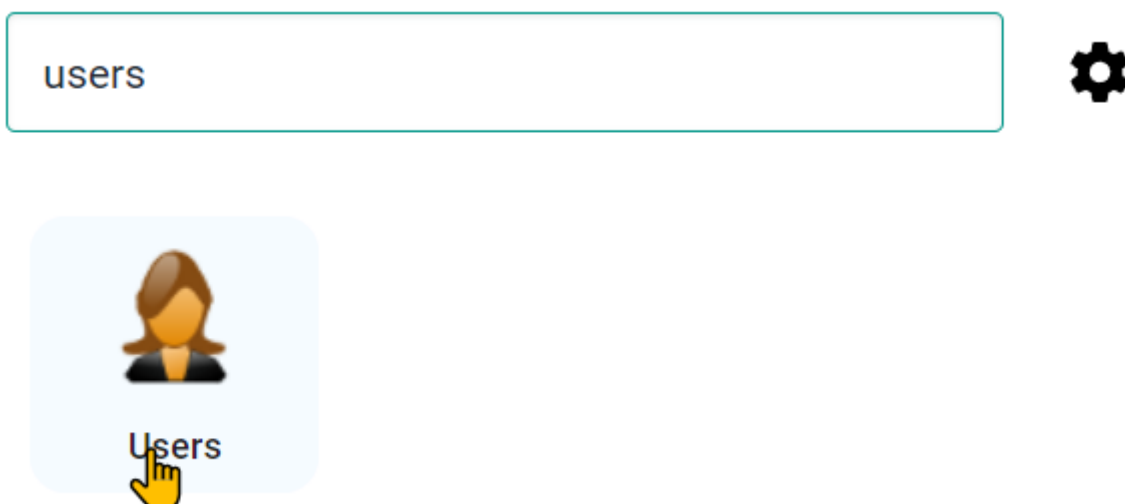
### Exercise 1 - Review user roles and their effect on user permissions

When we create a new user, we must first have in place the relevant user roles that will be assigned to the user. It is often also helpful to have the user groups available that a user will be assigned to; though this might come later on.

Let us start this process by reviewing the makeup of a user role.

#### Review the user roles management page

In order to start the process of creating a user role, navigate to the users app



From here, you can either list or add a new user role. Start by listing the available user roles

## User role

Create, modify, view and delete User Roles



In this system, you will only see a couple of user roles. In a live system, you are likely to see many more user roles.

Display name ▾	Description
Private tracker academy configuration	Allows for the private creation of tracker metadata
Superuser	Superuser
Tracker data analysis	Access to perform analysis of tracker data
Tracker data entry	Access for entering tracker data via the tracker capture app

Select the tracker data entry role in order to review it. You will see the user role management page is divided into 3 sections.

1. Basic information
2. Metadata authorities
3. Other authorities (this is subdivided into 4 additional sections)
  1. App authorities
  2. Tracker authorities
  3. Import/export authorities
  4. System authorities

**Basic information** : Includes the name and description of the user role

**Metadata** : the metadata section allows you to assign different permissions to a user role that allow for adding or deleting either public or private metadata objects. For example, you could provide someone access to create and delete public data elements. You will also see an option for external access. This is only available for report type objects, and allows this user role to give access to these reports via outside access (for example, through a web portal).

**Apps**: the apps section allows you to give access to the various DHIS2 apps that are within your instance. This includes all of the core DHIS2 apps, as well as any custom apps you may have on your own system. Note that this section only gives you access to the app, it does not specify what you can do within the app necessarily.

**Tracker:** tracker authorities have their own specific section as they are unique to the tracker data model. This does include events to some extent as well. This is because items like adding tracked entities or modifying events is unique to this model.

**Import - Export :** these authorities are given to a user role that will be dealing with the import/export of metadata, data or both. This is usually only given to a specialized role.

**System:** the system authorities allow a user to run various system level operations within DHIS2. This includes operations like validation rule analysis, predictor, and data approval for example.

Note: at the moment there is no comprehensive list of what each of the user authorities available here allows the user to do. While some are straightforward, many are not. As a result it can be slightly confusing to determine which authorities to assign a user role. We will try to provide some examples of template user roles that can be used for common tracker operations. When you are unsure about how to define a user role, the community of practice will be a better resource until the documentation is updated.

## Review the authorities assigned to the tracker data capture user role

We can review the authorities assigned to this user role in two ways.

1. For metadata authorities, select "only show selected metadata authorities." Since this is a data entry role, we will not see any metadata authorities selected
2. For all other authorities, view the authorities in the selected section of the app

# Other authorities

Manage access to apps, tracker, data import/export and system settings.

Available app authorities

Filter options

Data Visualizer app

Datastore app

Event Reports app

Event Visualizer app

Import-Export app

Interpretation app

Maintenance app

Maps app

Menu Management app

Messaging app

➡➡

➡

⬅⬅

⬅

Selected app authorities

Browser Cache Cleaner app

Tracker Capture app

Dashboard app

Available tracker authorities

Filter options

Administer program dashboard configuration

Ignore validation of required fields in Tracker and Event Capture

Manage program rule

Merge tracked entity instances

Tracker importer experimental

View event analytics

➡➡

➡

⬅⬅

⬅

Selected tracker authorities

Delete enrollment and associated events

Search Tracked Entity Instance in All Org Units

Update tracked entities

Delete tracked entity instance and associated enrollments and events

Uncomplete events

For this user role, we are only using authorities from the apps and tracker sections. When we create user roles, we should be thinking about creating roles that cover a specific function. We can then combine various user roles together to give our user the access they need. This may differ from a common approach of creating a user role for a specific job type (data entry clerk, reproductive health staff) or geographical level (national staff, provincial staff) for example; however such an approach is not recommended. Such an approach does not allow for any variation within those functions as it is not as flexible as creating generic, reusable roles.

Let us review the authorities assigned to this role.

There are only assigned 3 apps as part of this role

### Selected app authorities


Browser Cache Cleaner app


Tracker Capture app

Dashboard app


This means, if they only have this user role, they will only see these 3 apps in the apps menu (along with menu management, which every user sees).

Search apps







Tracker  
Capture



Dashboard



Browser  
Cache Cleaner



Menu  
Management

The user roles also has several tracker authorities assigned to it

## Selected tracker authorities

Delete enrollment and associated events

Search Tracked Entity Instance in All Org Units

Update tracked entities

Delete tracked entity instance and associated enrollments and events

Uncomplete events

These authorities specify which actions a user can perform as it relates to tracker data. A quick note, if a user can create an event or enrollment, they can also delete it. The delete authorities you see here allow for cascading the deletion (for example, they can delete all the events in an enrollment at once - rather than one by one).

Let us review each of the available tracker authorities as they are important for tracker user roles (note: they are not applied to the user role we are reviewing)

- Administer program dashboard configuration:
  - Allows a user to modify the default tracked entity dashboard layout that users see
- Delete enrollment and associated events
  - Allows a cascading delete of an enrollment in a program as well as all of its related events
- Delete tracked entity instance and associated enrollments and events
  - Allows a cascading delete of a tracked entity instance, all of its enrollments in all programs as well as all of the related events
- Manage program rule
  - Please ignore this, you can handle managing program rules via the metadata authorities section
- Search tracked entity instance across all organisation units
  - Allows a user to search for tracked entities across all organisation units, regardless of the search organisation units they are assigned
- Uncomplete events
  - Allows a user to incomplete a previously completed event
- Update tracked entities
  - Allows a user to update an existing tracked entity
- View event analysis
  - Allows a user to view analytics data related to any events

A combination of these authorities from tracker, along with authorities from the apps category, is usually what will be needed for the majority of user roles that are assigned to end-users in the system not responsible for any type of system maintenance.

## Log into the user with this role

In the tracker customization instance, log into the user that has this role assigned to them. Note that there are other components that make up this user role as we have discussed, including user groups, sharing and

organisation units; but we will focus on the implications of the user role for now.

Username : tracker\_entry

Password : District1#

First, go to tracker capture. Select **Parrot district hospital** for entering data along with the TB Treatment card program. Access to the program, including registering new TEIs and adding data to program stages, is actually controlled via sharing, which we will cover in the next session.

The user role however allows them to access tracker capture in the first place, and perform specific actions within the program and program stages that have been shared with them.

We can explore the features of what the user role is allowing by opening an existing record




You can incomplete events (via the “Uncomplete events” authority)

Sputum Examination Results	
Sputum Smear Result *	+ 10-99 AFB/100HPF <span>✕</span> <span>▼</span>
Culture Result *	+ 10-100 colonies <span>✕</span> <span>▼</span>
GeneXpert Result	TB confirmed, not Rifampicin (T) <span>✕</span> <span>▼</span>



Weight	
Weight in kg	76

IncompleteDeletePrint form

Update a TEI (via the “Update tracked entities” authority)

**Profile** **Edit**   

## Profile

Registration number	<input type="text" value="JX897678"/>
First name	<input type="text" value="James"/>
Last name	<input type="text" value="Dawes"/>
Date of birth	<input type="text" value="yyyy-MM-dd"/>
Age	<input type="text" value="32"/>
Sex	<input type="text" value="Male"/>  
Address	<input type="text"/>
Phone number	<input type="text"/>

Or perform a cascaded delete (via the "Delete tracked entity instance and associated enrollments and events" authority). Cancel the deletion of the enrollment by selecting "No."



## Delete enrollment

Are you sure you want to delete the selected enrollment? This will delete all events associated with this enrollment.

No

Yes

This is all possible via the user role and the authorities we have assigned to it.

## Exercise 2 - Create a new user

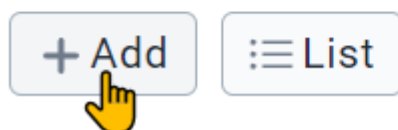
Create a new user and assign it the tracker data entry role

Let's go through the process of creating a new user and assign it the tracker data entry role.

Navigate back to the user page and select the plus icon to add a new user

## User

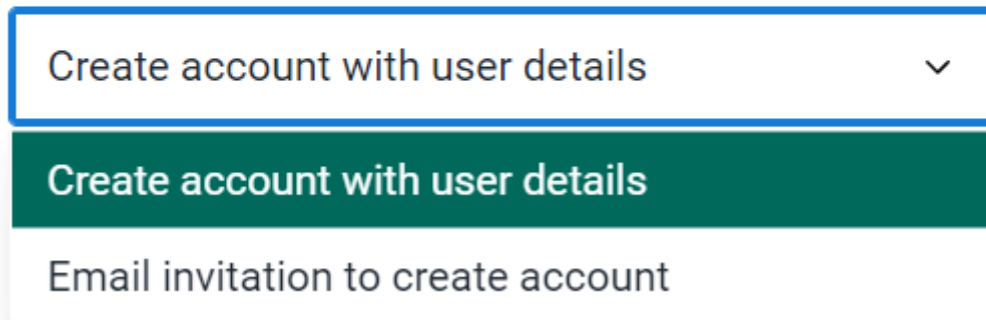
### Create, modify, view and delete Users



When you create a new user you can use 1 of 2 methods

# Invite user

## Create account or email invitation



Create account with user details

Create account with user details

Email invitation to create account

1. You can create the account directly with all of the user details
2. You can send an email invitation to create their account

Option 2 is often better in practice, as it allows for the user to create their own password directly, rather than you having to figure out how to share a password you have made for them, which may or may not get updated by the user.

Let us follow this method by selecting "email invitation to create account."

The user creation screen is then split into the following sections:

1. Basic information
2. Contact details
3. Organisation unit access. This is divided into 3 subsections
  1. Data capture and maintenance
  2. Data output and analysis
  3. Search
4. Roles and groups. This is divided into 2 subsections 4. User roles 5. User groups
5. Analytics dimension restrictions

We can then go through and review the sections and fields, starting with the basic information. This includes general details on the user itself

## Basic information

Username

Email address \*

First name \*

Last name \*

Interface language \*



Database language \*



☐ Disable this user account

Next, we have the contact details. This can be useful to record if you have alternative contact details for the user being created.

## Contact details

Mobile phone number

WhatsApp

Facebook Messenger

Skype

Telegram

Twitter

After the contact details, we have the **Organisation unit access** with 3 sections as follows

- Data capture OUs: Where the user can enter data (we can use Bird District)
- Data output OUs : Where the user can view data (we can use Bird District)
- Search OUs : Which orgunits the user can search for TEIs (this is superseded by the search across all OUs authority) (we can use Trainingland)

## Organisation unit access

Customise the organisation units this user has access to for searching, capturing and managing data.



**Organisation unit selections are recursive**

Selecting a unit gives access to all units in its sub-hierarchy.

**Data capture and maintenance ~**

The organisation units that this user can enter and edit data for.

Trainingland

Animal Region

Bird District

Cat District

Dog District

Fish District

Game District

Insect District

Food Region

**Data output and analysis**

The organisation units that this user can export and analyse.

Trainingland

Animal Region

Bird District

Cat District

Dog District

Fish District

Game District

Insect District

Food Region

**Search**

The organisation that this user can search for and in.

Trainingland

Animal Region

Food Region

Under the search orgunit assignment, you will see the option “Maximum organisation unit level for data output.” This allows you to restrict a user to creating outputs up to a certain level if desired. For example, if I only wanted to allow a user to create district outputs and not regional or national outputs, I could place this restriction on the user. In normal cases, this will be blank however.

## Maximum organisation unit level for data output

▼

Eventually, under the **Roles and groups** heading, you will get to the area where you have to assign a role to the user. Assign the user the role of tracker data entry.

## Roles and groups

Manage what roles and groups this user is a member of.

Available user roles		User roles this user is assigned *
<div>Filter options</div>		Tracker data entry
Private tracker academy	➡	
Superuser	➡	
Tracker data analysis	➡	

Next, we see available user groups. We will skip this for now as we will discuss user groups in more detail later.

Lastly, we have **Analytics dimension restrictions**. We will not cover this in this academy.

A quick note, if you change the invite type to “Create account with user details”

## Invite user

### Create account or email invitation

Create account with user details

▼

Create account with user details

Email invitation to create account

You will see one more heading under Basic Information labeled "Security." If we are creating a user this way we would also enter their password details here.

## Security


Settings for how this user can log in.

Password \*

Minimum 8 characters, one uppercase and lowercase letter and one number

Repeat password \*

Account expiration date

OIDC mapping value

OpenID Connect mapping claim for your identity platform

LDAP identifier

☐

External authentication only (OpenID / LDAP)

Switch back to email invitation to create account.

When you have filled in all the details, select "Create user" to send the invitation to the person's email.

Sign the user up

Sign this user up by checking the email you entered when creating the account (make sure you are logged out of the account you used to make the new user!)

## [DHIS 2] Invitation to create user account at academy.dev.dhis2.org/tracker\_cu



Inbox x

**DHIS 2 message [No reply]** <no-reply@dhis2.org>

6:06 PM (0 minutes ago)



to ▾

This is an invitation to create a DHIS 2 user account.

Please follow the link below to accept the invitation and create your account.

[https://academy.dev.dhis2.org/tracker\\_cu/dhis-web-commons/security/invite.action?token=MndRUXhTRWxkWTINN2FkZTVXay1yeTVrWXpJS1FtQTNPVDF0U292QlhTSTpJRFJudURFWVFBOVh2cmc0U2JGMndseWtKNzE4UWthcFY1VjBVcGIJcU9hWk0](https://academy.dev.dhis2.org/tracker_cu/dhis-web-commons/security/invite.action?token=MndRUXhTRWxkWTINN2FkZTVXay1yeTVrWXpJS1FtQTNPVDF0U292QlhTSTpJRFJudURFWVFBOVh2cmc0U2JGMndseWtKNzE4UWthcFY1VjBVcGIJcU9hWk0)

You must respond to this invitation within 4 days. If you take no action, the invitation will expire at that time.

Host: [https://academy.dev.dhis2.org/tracker\\_cu](https://academy.dev.dhis2.org/tracker_cu)

Follow the link and fill in the new details for the user. Select Create once all the details are entered.




## Create a new account

Name	<input type="text" value="Nick"/>	<input type="text" value="Dutta"/>
Username	<input type="text" value="nick"/>	
Password	<input type="password" value="....."/>	
Confirm password	<input type="password" value="....."/>	
E-mail	<input type="text" value="shurajit@dhis2.org"/>	
Mobile phone	<input type="text" value="+4464756757"/>	
Employer	<input type="text" value="UiO"/>	
<input type="button" value="Create"/>		

This will log you in as the user. You can test the functionality to ensure they have the correct access.

## Exercise 3 - Create a new user role

Navigate to users and list out the user roles

Display name 	Description
Private tracker academy configuration	Allows for the private creation of tracker metadata
Superuser	Superuser
Tracker data analysis	Access to perform analysis of tracker data
Tracker data entry	Access for entering tracker data via the tracker capture app

Select the "New" button to add a new user role

Give the user role a name "tracker data analysis" (use your initials as a prefix to the name) and add a description like:

Allows a user to access event/tracker data outputs via data visualizer, maps, event reports, event visualizer, dashboard and create public items from within these apps.

## Basic information

Name \*

SND\_tracker data analysis

Description

Allows a user to access event/tracker data outputs via data visualizer, m...

Short, clear description of what this role is for.

Let us now think through the permissions we want this role to grant.

1. They should be able to access the various analysis apps
2. They should be able to see event data
3. They should be able to add public reports from the analysis apps

In order to provide a user with these authorities, we actually need to use three sections

1. Metadata, to allow the creation of public objects
2. Apps, to give access to the analysis apps
3. Tracker, to give access to the event data

We can start in the apps box and go from there. We can grant them the following authorities

Available app authorities		Selected app authorities
<input type="text" value="Filter options"/>		
Android Setting app	➔	Event Visualizer app
App Management app	➔	Event Reports app
Browser Cache Cleaner app	➔	Data Visualizer app
Capture app	➔	Dashboard app
Data Administration app	➔	Maps app
Data Approval Classic app	➔	linelisting app
Data Approval app	➔	
Data Entry app	➔	
Data Quality app	➔	
Datatore app	➔	

Next, let's look at the metadata section. You will notice that some of the authorities for reports are already selected, for example add/update private dashboard and delete dashboard. This is because by giving them access to the dashboard app, you also give them access to manage at least their own dashboards.

To allow them to create public reports, we can modify the following authorities manually:

Authority	<input type="checkbox"/> Add/Update Public	<input type="checkbox"/> Add/Update Private	<input type="checkbox"/> Delete	<input type="checkbox"/> External access
Dashboard	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Event Chart	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Event Report	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Map	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Visualization	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Added  
manually

Added automatically when  
providing access to the app

You can see we are just trying to match the apps we granted with the public reports we want them to be able to make.

Lastly, lets add the authorities from the tracker section

**Available tracker authorities**

Filter options

- Administer program dashboard configuration
- Delete enrollment and associated events
- Delete tracked entity instance and associated enrollments and events
- Ignore validation of required fields in Tracker and Event Capture
- Manage program rule
- Merge tracked entity instances

**Selected tracker authorities**

- View event analytics

➡➡

➡

⬅️⬅️

⬅️

This is strictly a data analysis role, we are only adding the authority to view event analytics. If we want them to enter data, we can also assign them the data entry role in combination with this role! This authority will allow them to view the event data within the programs/stages shared with them.

We do not need any authorities from import-export or system. This will be true in most of the user roles that are not related to administration of the system.

We can now save this user role.

Assign this user role to the user you previously created

Open the user you previously created and assigned the "tracker data entry" user role to them. Do not change any parameters, just assign them the tracker data analysis user role you just made.

### Roles and groups

Manage what roles and groups this user is a member of.

Available user roles

Filter options

Private tracker academy  
Superuser  
Tracker data analysis

➡

➔

⬅

⬅

User roles this user is assigned \*

Tracker data entry  
SND\_tracker data analysis

Save this change.

Log in with the user you edited

After logging in, access the apps menu.

Search apps

Event Reports

Event Visualizer

Tracker Capture

Dashboard

Browser Cache Cleaner

Data Visualizer

Maps

Menu Management

We can already see an immediate difference here in the apps they can access.

You can make an event report using some data from this month from the TB treatment card program to show they now have access to review the data.

#	Date of visit ⚙	Registration Date ⚙	Incident date ⚙	Organisation unit ⚙	First name ⚙	Last name ⚙	TBTC TB Patient Type ⚙	TBTC TB Disease Site ⚙
1	2022-01-18 00:00:00.0	2022-01-18 00:00:00.0	2022-01-18 00:00:00.0	Parrot District Hospital	James	Dawes	New	Pulmonary
2	2022-01-11 00:00:00.0	2022-01-11 00:00:00.0	2022-01-11 00:00:00.0	Parrot District Hospital	Holly	Smith	Treat after loss to follow up	Pulmonary

The user we are logged in with has two roles, and these roles give them distinct permissions. By creating roles this way, rather than creating a role for a user type, more flexibility is granted. For example, we could have a number of users that just have access to data analysis, but can not enter any data for example. Same for data entry; or we can combine existing roles like we have done here.