User Manual GST Transfer Tool

Contents

1 Introduction

The GST Transfer Tool (GTT) enables its users to transport data from a source database to another destination database. In order to achieve that it allows to use two different major modes: auto-matching and custom matching.

The auto-matching is going to try to copy as much data as possible. In order to achieve that it tries to prevent conflicts between data which is going to be added and already existing data on the destination database. If a conflict cannot be resolved automatically the user will be informed and has to try to solve the conflict. GTT offers some editing capabilities in order to support the user with that.

Within the custom matching mode the user can override almost all settings of the destination with data from the source.

The following manual will give an introduction into GTT and will explain the screens and buttons and possible conflicts and how they can be solved.

2 Home View

Figure 2.1
GST Transfer Tool
Home View
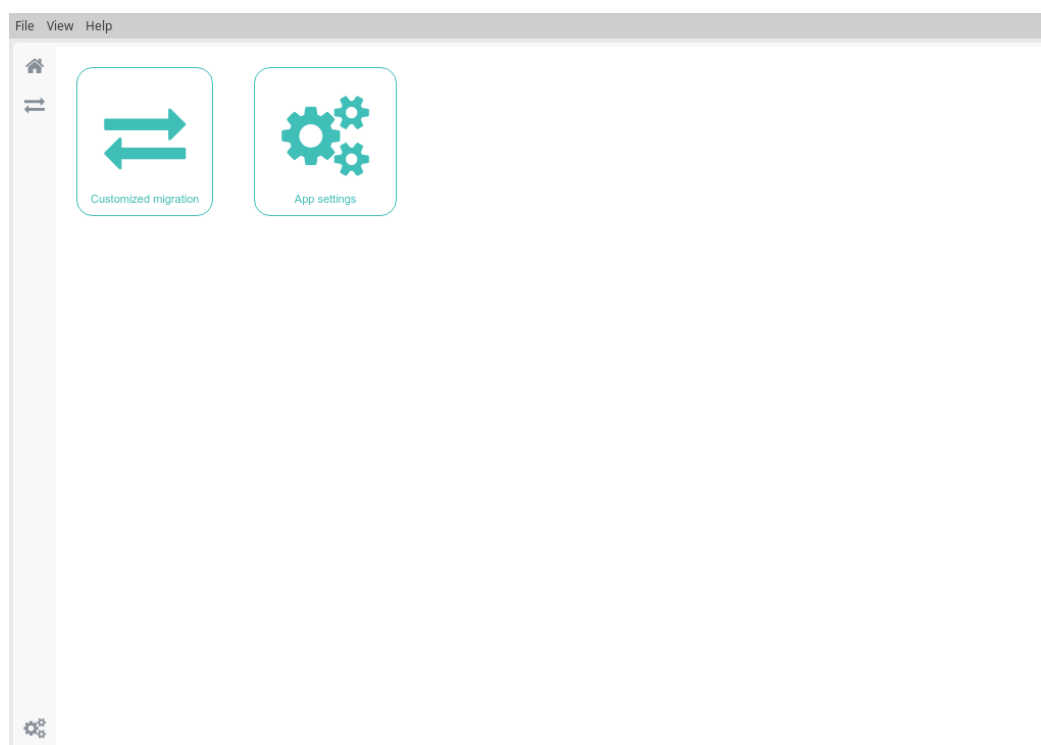
After starting GTT the user will be presented the simple Home View. It features a menu bar on top, a menu bar on the left and two major buttons in the middle.

2.1 Top Menu

Within the top menu the following items can be found: **File**, **View** and **Help**. As of now GTT does not feature any of these items. The top menu is visible on all other screens as well.

2.2 Left Menu

The greyish left bar allows the user to jump quickly to the home view 🏠 to the actual matching view ⇄ and to the settings view ⚙. The left menu stays visible on all other screens as well and allows the user to navigate quickly to a desired function.
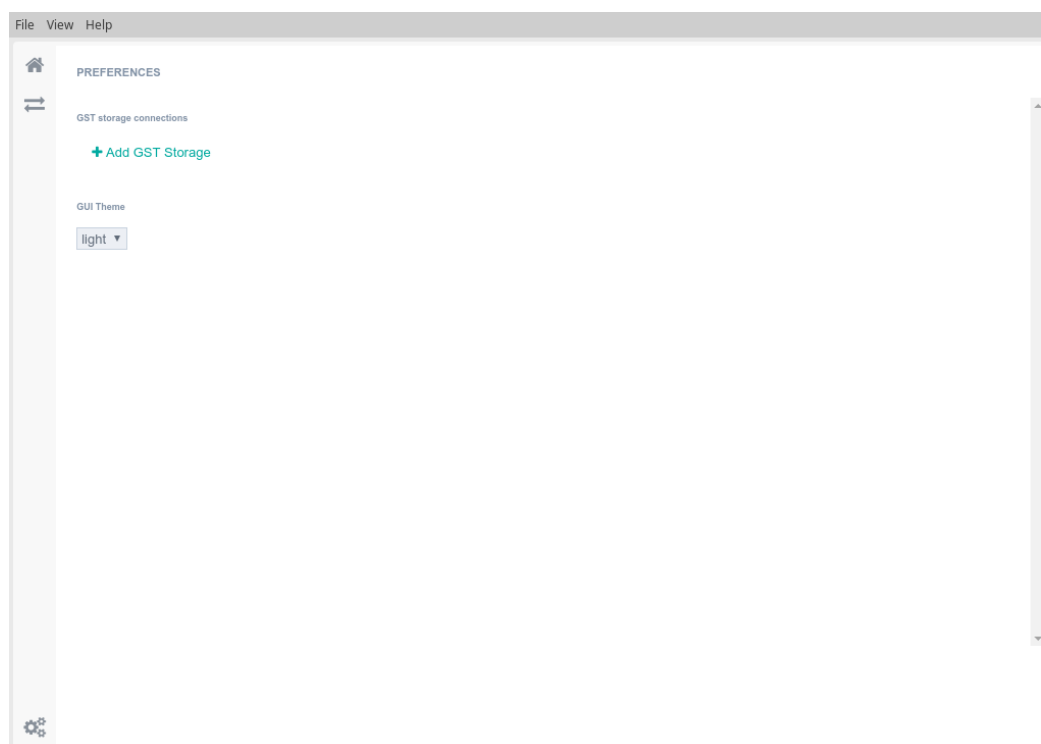
2.3 Center Screen

The center of the home view features two major icons: ⇄ and ⚙ which allow the user to jump to the matching view and to the settings view.

3 Settings View

When GTT is being started for the first time the settings view is pretty empty.

Figure 3.1
GST Transfer Tool
settings view after the
first start of GTT.

3.1 Connection Details

+ Add GST Storage allows the user to store connections to several GST Storage instances. After the mask has been activated the user is able to provide **host**, **port**, **user**, **password**, **database type**, **database name**, **schema** like in GST Desktop. Furthermore a **label** can be used in order to identify the the connection easily in other screens of GTT. Once all necessary data has been provided a click on **+ Submit** stores the connection. A click on **⊘ Abort** resets the input.

> **Note**
>
> After entering the details for a connection GTT will try to connect to the database and print an error message in the lower right corner if the connection is not possible.

3.2 Color Scheme

Within the drop down box a color scheme, either **light** or **dark** can be chosen.

4 Migration View

The actual migration will be started within the **Migration View**. This view allows to select a source on the left hand side and a destination on the right hand side. GTT allows to transfer and migrate **Models** from the GST feature **Model management**, **Features** and **Feature Classes** as well as **Themes** and **Color Maps**. Spatial Reference Systems will be handled automatically if needed.
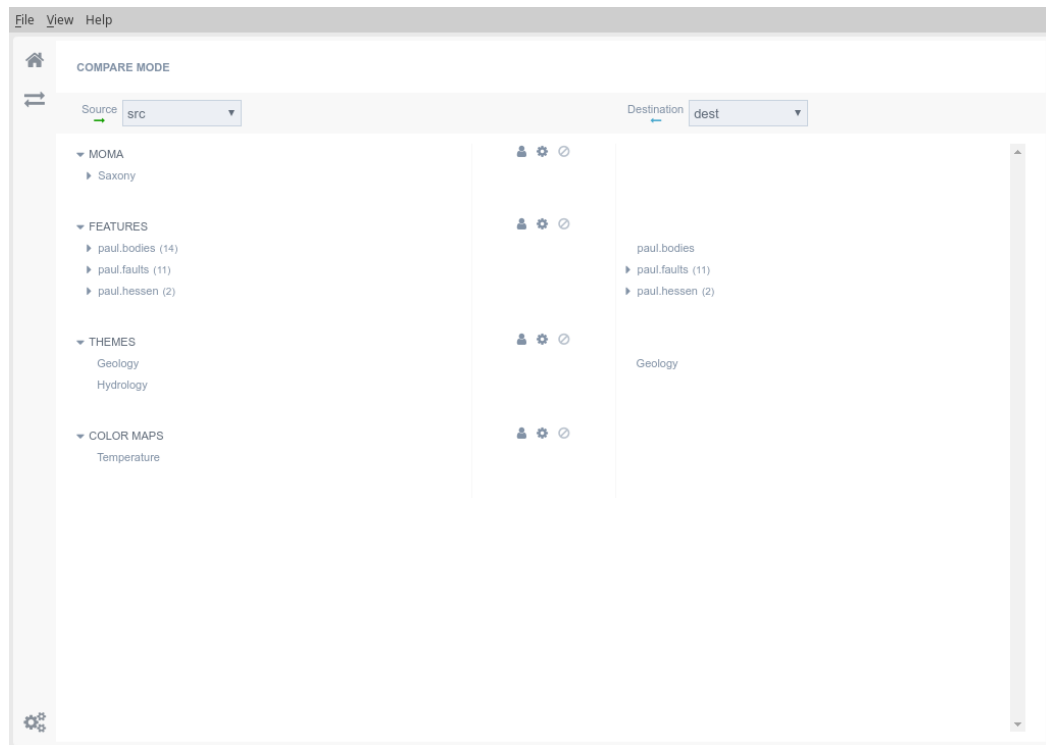
> **Note**
>
> The **Migration View** is organized according to dependencies. E.g. Modelmanagement requires certain features and thus feature classes to be existing in order to build up a proper model. Thus adding a new model management entity might add new features as well.

> **Note**
>
> Spatial Reference Systems[SRS] will only be added if needed. GTT does not compare existing SRS regarding their parameters and labels. GTT uses the code type and code value in order to match SRS from different databases, e.g. EPSG (code type) 32633 (code value).

4.1 Database selection

In order to select a **source** click on the drop down box on the top left. It will open a list of stored connections. Once the connection has been established all needed data is being loaded into GTT and displayed as tree.

> **Note**
>
> The source database is read-only. GTT will make no changes to the source database.

In order to select a **destination** click on the drop down box on the top right. It will open a list of stored connections. The connection which has been chosen as source cannot be selected in order to prevent errors during the migration process. Once the connection has been established all needed data is being loaded into GTT and displayed as tree.

> **Note**
>
> Once the migration itself has been started GTT is going to make permanent changes within the destination database. Please make sure that no other GTT or GST Desktop instance is going to make changes in the meanwhile.

4.2   Tree view

The tree view is one of the core elements in the **Migration View**. Right after connection to either database it lists all already existing elements within the **Modelmanagement Tree** (referred to as **MOMA**), **Feature classes and Features** (referred to as **FEATURES**) and **Themes** (referred to as **THEMES**). Each tree can be opened and browsed as in e.g. GST Web or GST Desktop.

Figure 4.2
Migration View with several added features, indicated by a ✚ and one conflict indicated by a !.
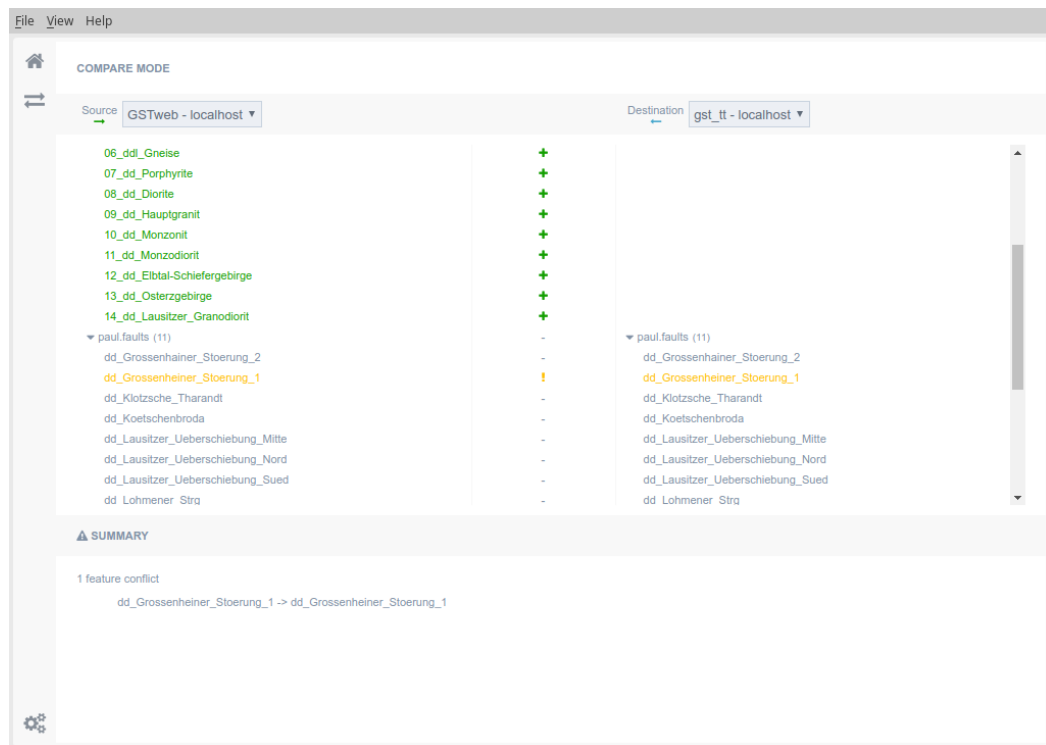
4.3 Icons

In the middle of the **Migration View** three major icons are controlling the desired actions:

👤   Starts the manual migration mode.

⚙   Starts the semi-automatic migration mode.

⊘   Cancels all currently made settings and resets the migration.

Whilst the migration process the user might encounter different icons within the trees:

+   The object from the source database will be added to the destination database.

!   There is a conflict between the source and the destination object which the user needs to resolve manually.

✖   The object on the destination database will be deleted.

→   The object from the source will override the object on the destination.

—   The object from the destination database will be preserved and no action will be taken.

4.4 Detailed View

Whenever an entry in the tree view has been clicked the lower part of the application will give a more detailed view of what is going to take place or which conflicts are existing. Furthermore it allows to Unmatch an element, which means that it will not be transferred to the destination.

Figure 4.3
After adding the feature the **Detailed View** shows which properties will be transported to the destination with a **+**.
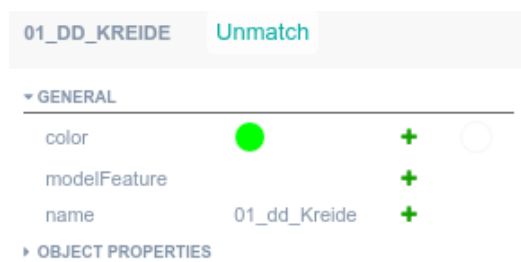
Figure 4.4
If a conflict occurs while adding features the conflict can be inspected in the **Detailed View**. E.g. properties that have changed are marked with **!**.

Figure 4.5
After the conflicts
have been resolved
the entries are
marked with ➡.

DD_GROSSENHEINER_STOERUNG_1	Unmatch		
GENERAL			
color	🟡	-	🟡
modelFeature	Fault	➡	
name	dd_Grossenheiner_Stoerung_1	=	dd_Grossenheiner_Stoerung_1
OBJECT PROPERTIES			
ftype	antiklinal	➡	synklinal

> **Note**
>
> A feature can just be either overridden completely or not at all. There is currently no mixture of these modes, e.g. overriding a subset of properties, possible.

4.5   Migration Modes

GTT features two major migration modes: a semi-automatic and a manual mode. The semi-automatic mode tries to resolve as many conflicts. Conflicts that cannot be resolved automatically have to be resolved by the user.

Each mode can be started for the each of the entity types: MOMA, FEATURES, THEMES, COLOR MAPS. Be aware that dependencies might introduce automatically other objects to be added (especially in the context of model management and features).

Semi-automatic Mode ⚙

After clicking on ⚙ the semi-automatic mode has been started. This mode tries to copy as many objects and their dependencies.
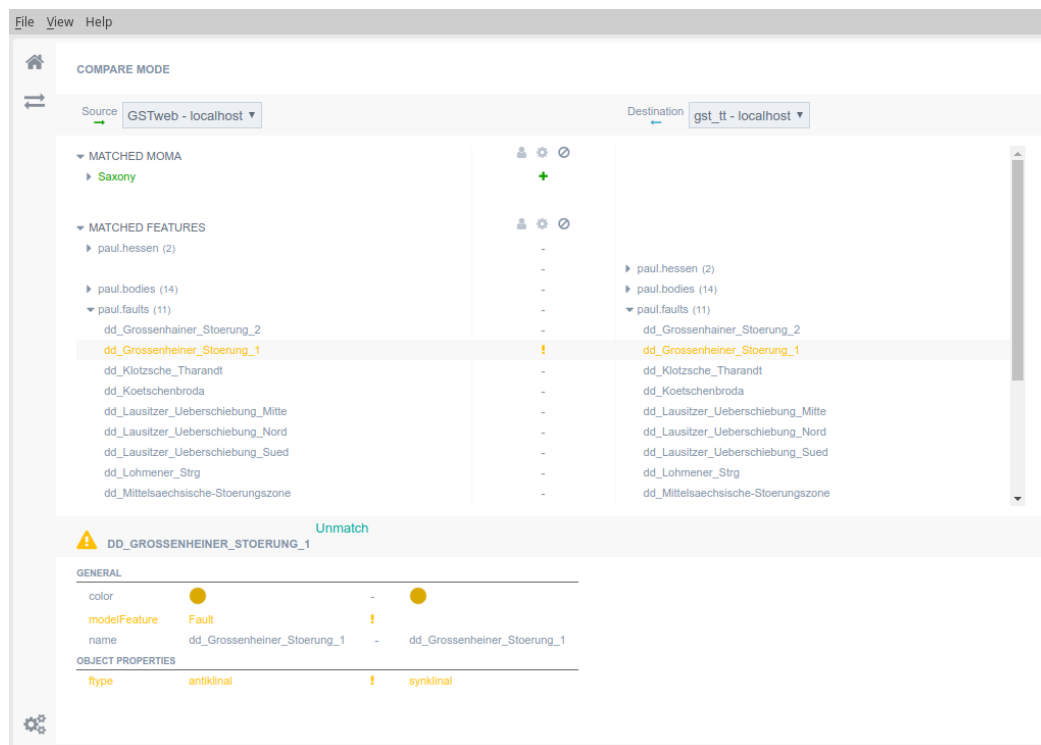
If a conflict occurs the corresponding object is being marked with a **!** and the user needs to resolve it manually.

Manual Mode 👤

The manual mode can be activated after clicking on 👤. This mode allows to select single feature from the Model management or feature tree in order to overwrite them in the destination database.

If a feature cannot be migrated to the destination database it is marked with **!** and the conflict needs to be solved.

5 Use Cases

In the following sections common use cases will be described. This can be for example the need to copy all features to an existing empty database. Another use case could be the update of an existing feature.

5.1 Copy all

This use case can be seen as an initial copy or backup of an internal production database to an external presentation database. After connection to both databases the migration view might look as like in the following screen shot:

Figure 5.1
Initial connection to
a fully propagated
production
database(right) and
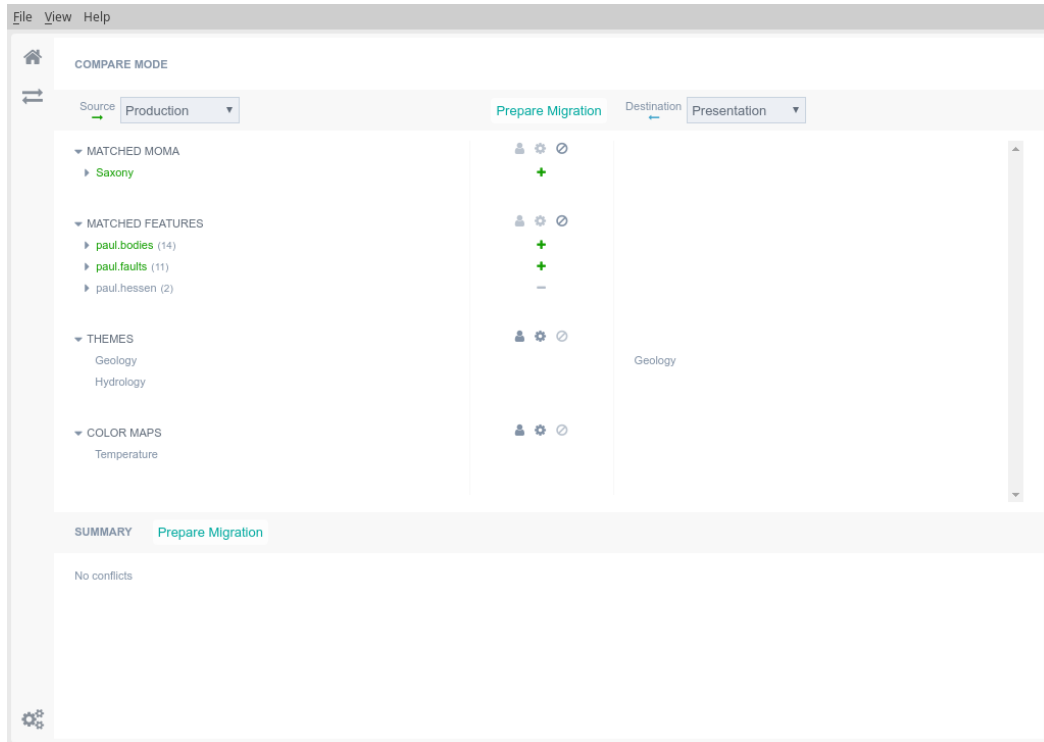an empty
presentation
database (left)
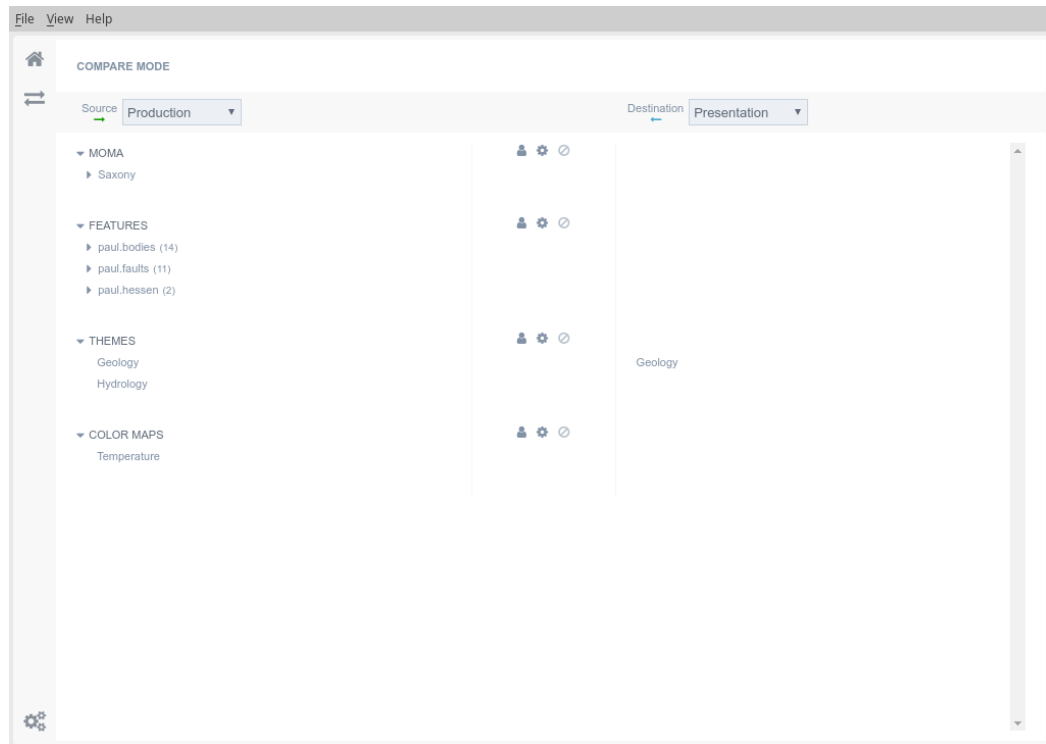
The left part of the screen is empty, since there are no model or feature classes.

The migration process can be started easily by clicking on ⚙ e.g. on the **MOMA** level. Since the elements of model management highly depend on the feature classes and features itself those will be added subsequently.

If there are no conflicts, which is very likely since there should be no data in the destination database **Presentation**, GTT will show buttons which prepare the migration which means that there are more deeper check being executed.
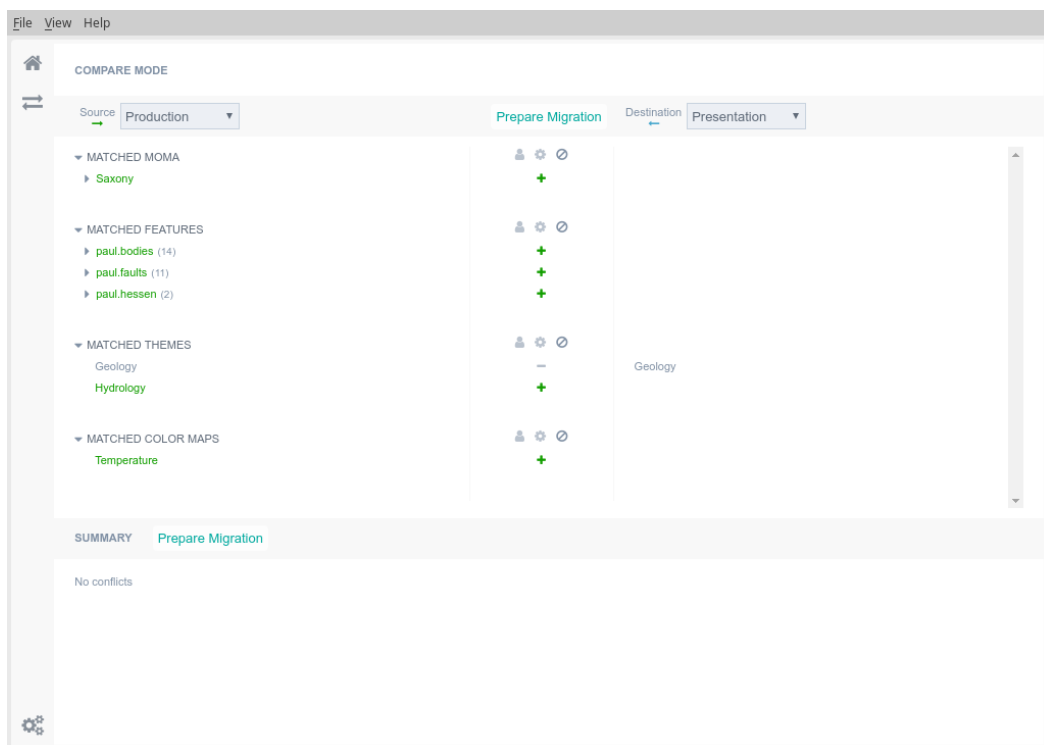
Figure 5.2
State of GTT after
clicking the top ✿ .
Newly added model
elements, feature
classes and features
are marked with ✚.
Note that the
application states
that there are no
conflicts in the
bottom of the
screen.

▼ MATCHED MOMA
  ▸ Saxony

▼ MATCHED FEATURES
  ▸ paul.bodies (14)
  ▸ paul.faults (11)
  ▸ paul.hessen (2)

▼ THEMES
  Geology   Geology
  Hydrology

▼ COLOR MAPS
  Temperature

SUMMARY   Prepare Migration

No conflicts

The user now can decide to add even more elements, like the feature class **paul.hessen** and its features as well as the theme **Hydrology** and the color map **Temperature**. This can be done easily by clicking ✿ in the corresponding section.
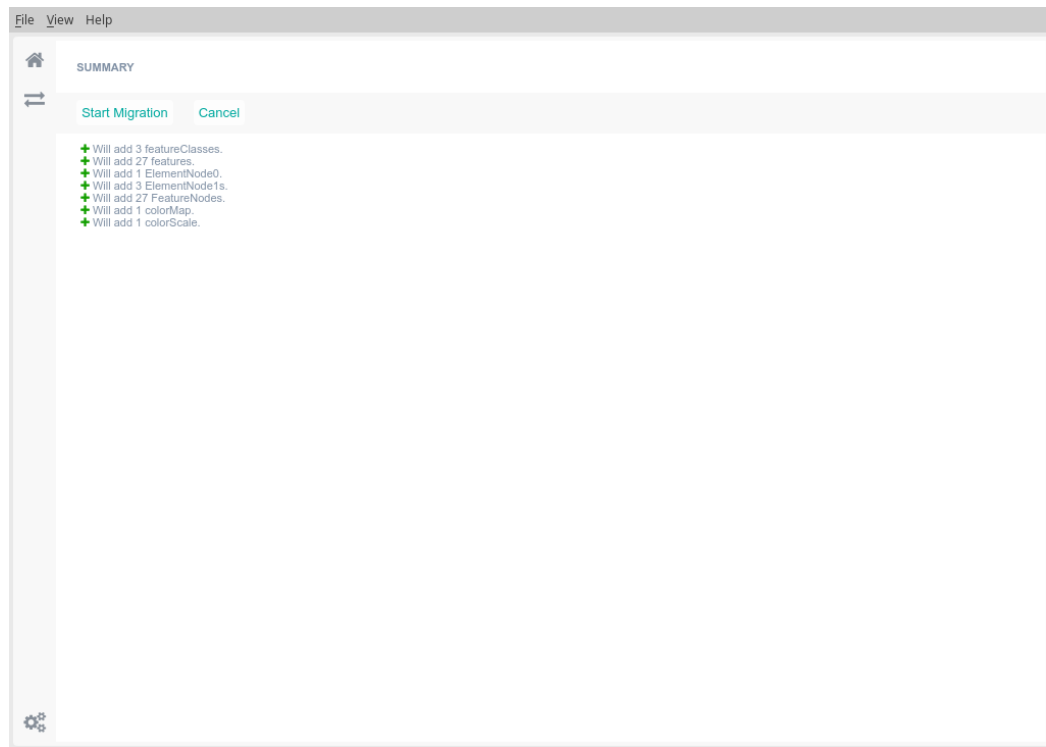
Figure 5.3
State of GTT after
adding the feature
class **paul.hessen**, the
theme **Hydrology** and
the color map
Temperature
manually. Note that
the theme **Geology**
has not been
changed ▬ since it
is a default of a new
GST installation.

File View Help

COMPARE MODE

Source → Production ▼   Prepare Migration   Destination ← Presentation ▼

▼ MATCHED MOMA
  ▸ Saxony   ✚

▼ MATCHED FEATURES
  ▸ paul.bodies (14)   ✚
  ▸ paul.faults (11)   ✚
  ▸ paul.hessen (2)   ✚

▼ MATCHED THEMES
  Geology   ▬   Geology
  Hydrology   ✚

▼ MATCHED COLOR MAPS
  Temperature   ✚

SUMMARY   Prepare Migration

No conflicts

After all elements have been added according the user's needs the migration can be prepared. A click on Prepare Migration will do so and print a summary screen of what is going to happen.

With a click on Start Migration the actual migration process will be started using 4 simultaneous threads. A spinning icon will inform about the running process. At this point there is no progress bar indication the actual progress.

Right after the migration has been completed GTT will show which particular objects have been migrated and which might have produced an error.

Figure 5.6
Summary of done
migrations grouped
Completed
Transactions, Failed
Transactions,
Subsequent errors
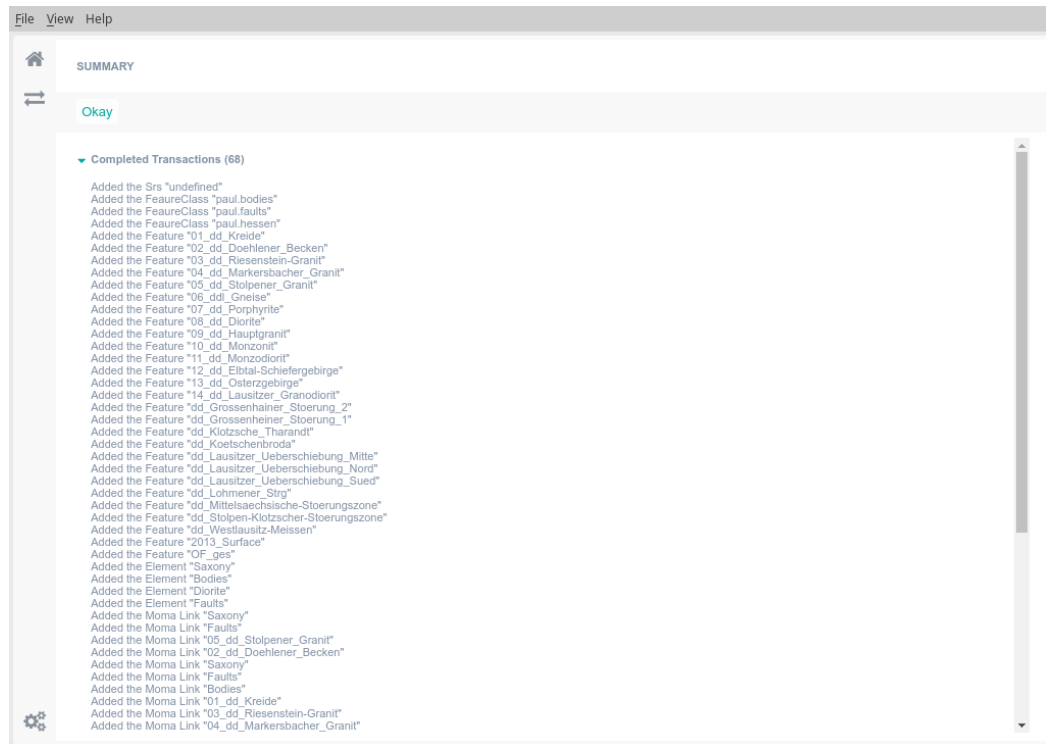
If there has been no failed transaction been reported all data has been transfered successfully to the destination database **Presentation**.

5.2 Update one Feature

Once after all data has been added and published a feature, e.g. the properties or the geometry, might change over time. It might be desired to update a single feature or a list of features. The procedure in order to do will be described in the following.

Figure 5.7
After connecting to
two databases which
kept in sync
regularly the screen
might look like that.
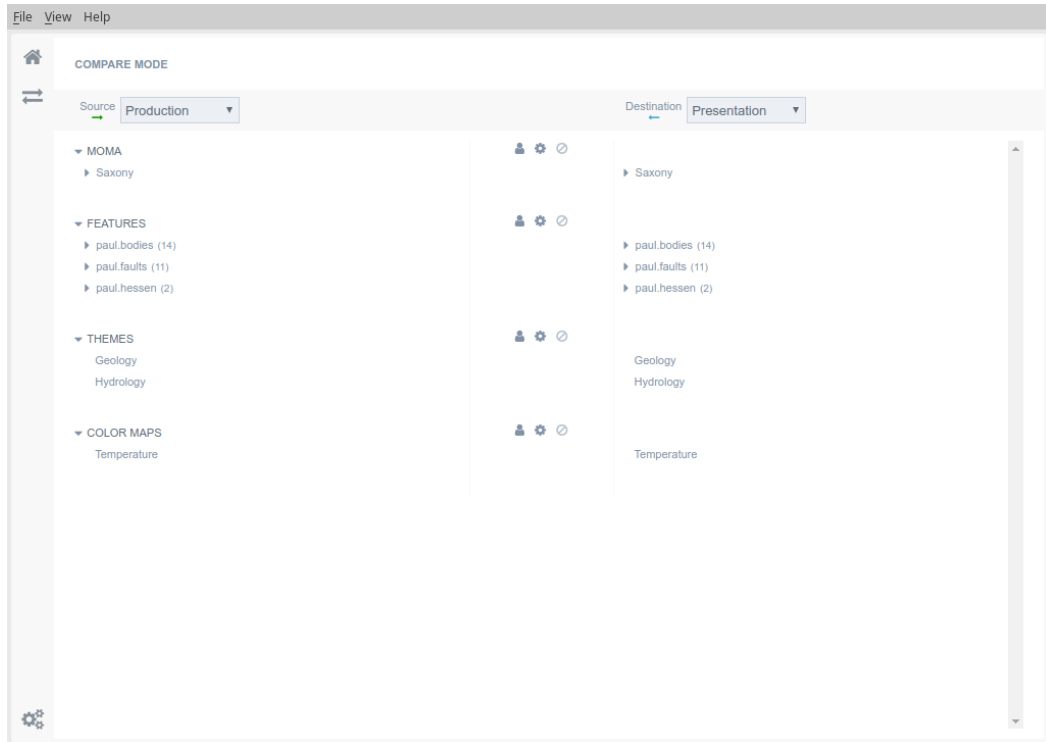
Right after connecting to **Production** and **Presentation** databases. All the content should look similar if they were kept up to date. For the following use case it is assumed that the feature **01_dd_Kreide** within the feature class **paul.bodies** has changed its geometrical presentation.
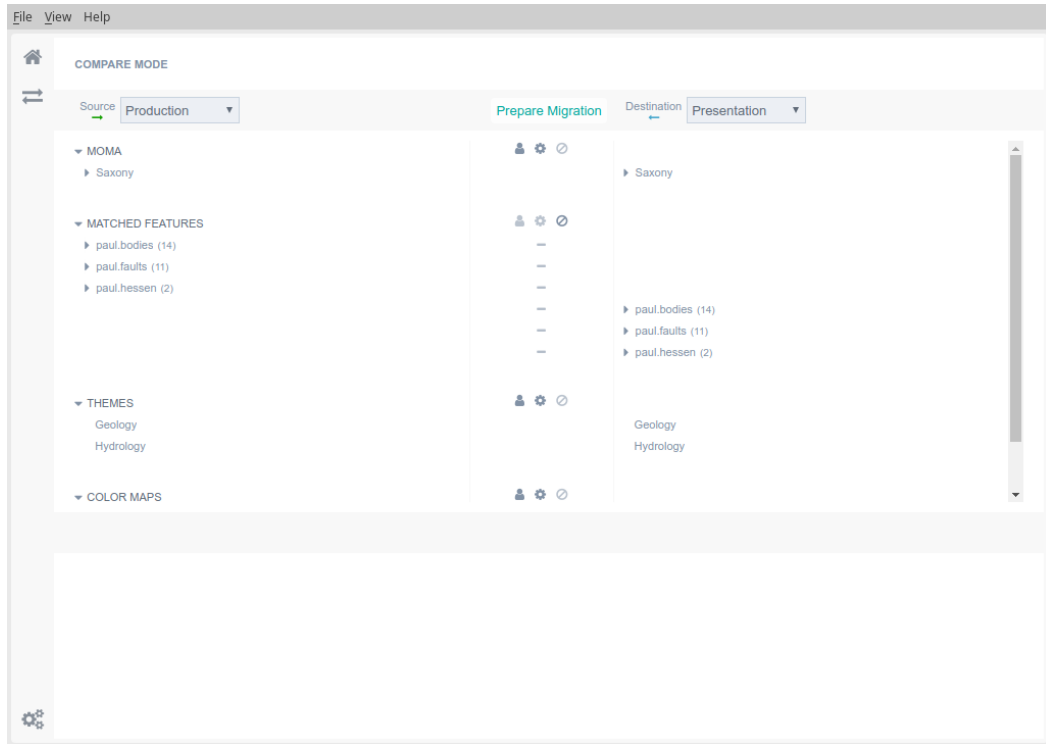
In order to push the change to the presentation database the custom match mode has to be activated by clicking on 👤 on the level of **FEATURES**.

Figure 5.8
The custom match
mode has been
activated after
clicking on 👤 in the
row of **FEATURES**.
Please not how the
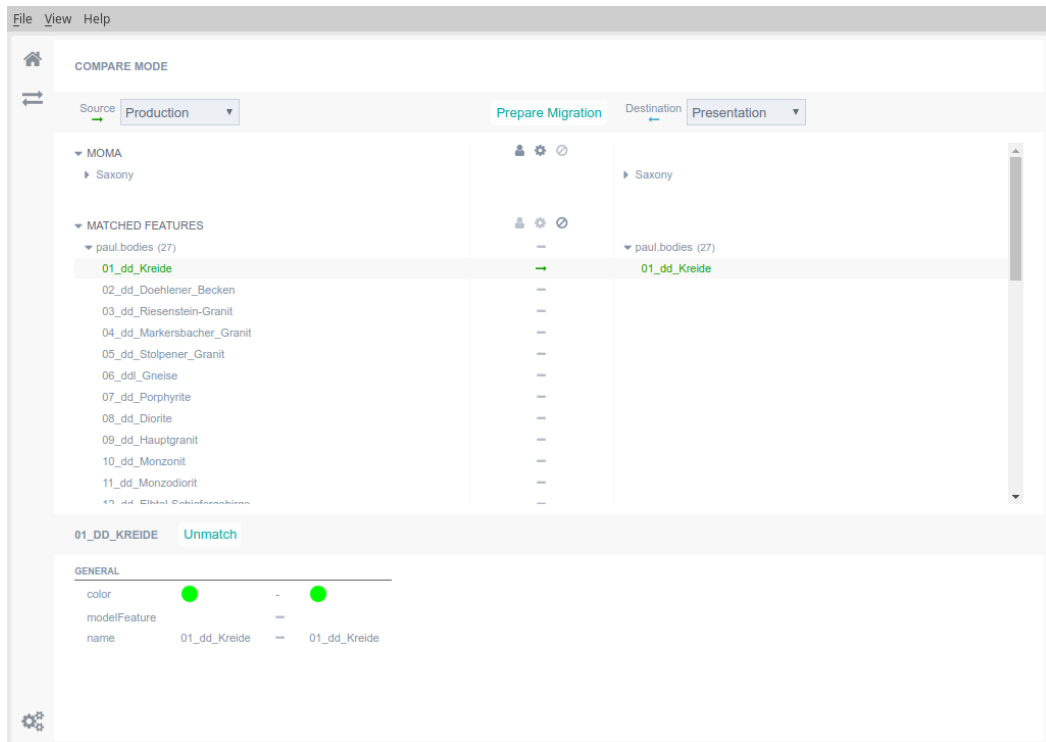left tree is located
below the right tree.

By clicking on the ➖ next to the desired feature GTT will change the state to ➡ meaning, that the feature in the destination will be overwritten.

Figure 5.9
The feature
01_dd_Kreide will be
transported from
Production to
Presentation and thus
the former feature
will be overwritten.
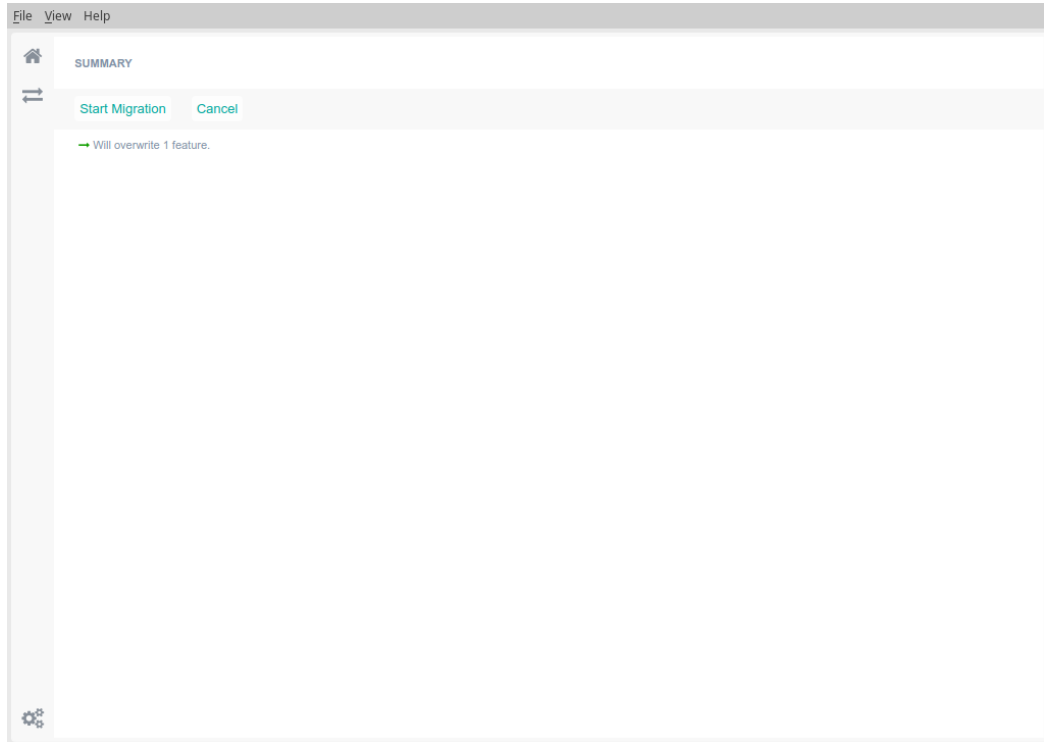
Once all the features which should be overwritten have been marked to be migrated the migration can be prepared by clicking on Prepare Migration.
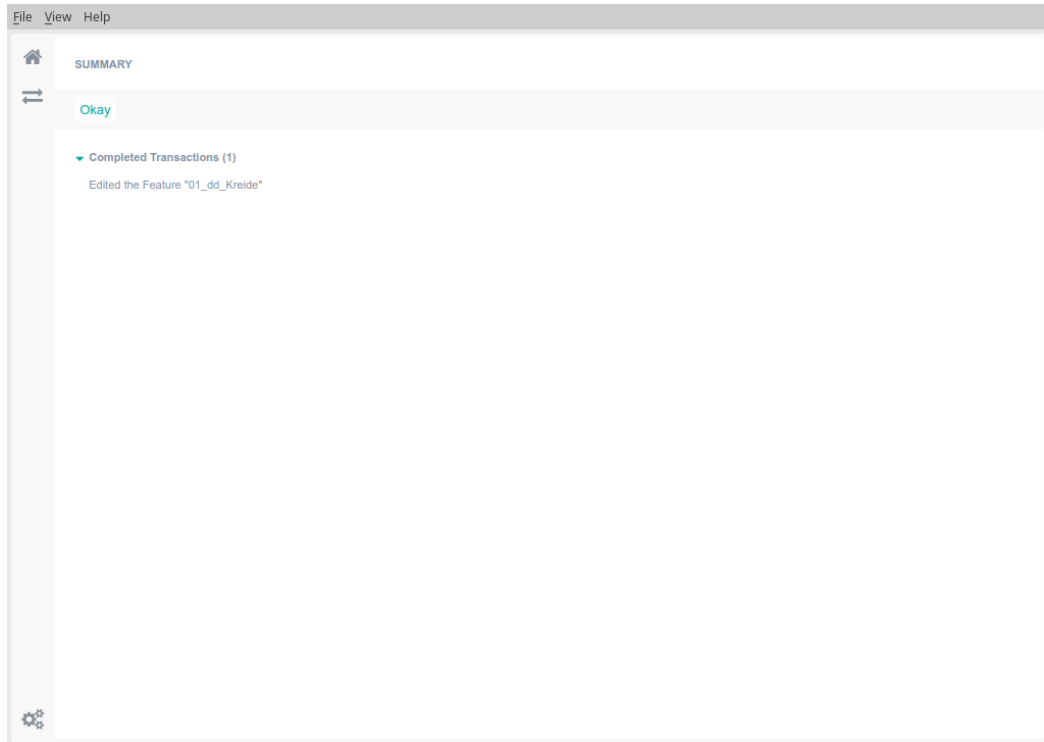
5.3   Possible conflicts and their solution

During the usage of GTT there might occur conflicts being marked with ❗. These conflicts might come up due to changes in e.g. object properties. Each conflict can be examined by clicking on the affected object. The detailed pane will then show why this conflict exists and allows the user to take action.
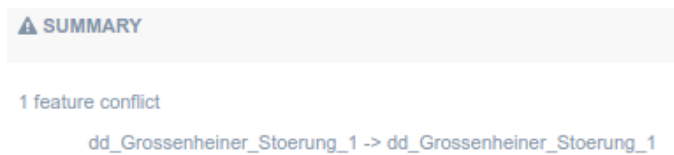
Figure 5.13
After selecting the
corresponding
object the conflict is
displayed in detail
within the detail
pane.

Since single conflicts cannot be adjusted a conflicted object can just be resolved as whole. In order to resolve the conflict the user can either press Unmatch or set the source object to overwrite the destination object completely by clicking the ! next to the feature and turning it into a ➡.

Note

The conflict status can be changed from conflicted ! to resolved ➡ by clicking on !. A second click on ➡ resets the state to conflicted !.

Note

If an object cannot be unmatched an error will be displayed in the lower right:
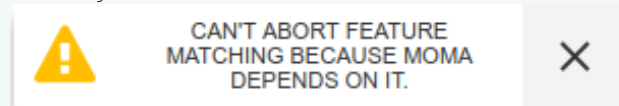
If such an error occurs the corresponding model management element has to be unmatched as well.