

## Coordinate changes between development and production databases

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### The Case

You continue to develop your product and for this purpose it is necessary to change a database. When the next development cycle finished it is required to update a production database accordingly.

In addition, usually the database modifications are carried out by various teams and various people (DBA, programmer, project manager etc.) and this is why there is no guarantee, that SQL scripts, will be correctly saved and, not less important, saved in correct order. You cannot simply replace a production database with a copy of modified development database, as in this case some live data of the production database can be lost.

Alternatively, developers could manually write a script for each database change. The scripts would be collated to produce a migration script, which would be used to update the production database. However, for this to work, the scripts must be complete, accurate, and merged in the correct order. Any mistakes or omissions could cause the chaos of a malfunctioning database, arguments between testers and development personnel, and problems with dependencies.

Equally, tracking down the updates at the end of the development cycle and producing a viable script at this stage can be extremely time- and labor-intensive.

### Main goals to be achieved

- Functional check of data duplication processes
- Accuracy and precision of changes which have been made in a development database.
- Significant reduction of human resources and time.
- Speeding up development.
- Creating and maintaining an audit trail of updates.

### Our solution

When development has finished, use **Cross-Database Studio** to compare development and production databases and generate synchronization SQL scripts to migrate your changes:

1. Compare development and production database with **Cross-Database Studio** in order to display or generate detailed report about differences between two databases. The report optionally will include the differences in tables, table structure, primary key, indexes, foreign keys, data etc.
2. Analyze received reports, choose database objects you need to migrate and generate synchronization SQL scripts. You can create SQL scripts on individual schemas objects only (even at the level of a single cell value) or produce migration SQL script for all objects.
3. Save the SQL script and edit it, if required.

4. Run synchronization script on the copy of production database to migrate the changes.
5. You may compare two databases again to reconcile the changes.
6. When you are satisfied with migration results, run synchronization SQL script on production database and if required, compare databases to reconcile the changes.
7. You can assign the test at night, or at any time you are comfortable with, by using the scheduling capabilities of the CDBS products.

## Advantage of our solution

- Changes do not need to be captured manually, reducing development time overhead and eliminating human error.
- Data is preserved on the staging and production databases.
- High-quality script generation ensures accurate, repeatable results.
- Automated process dramatically reduces developer's time investment.
- Reporting features and saved script provide an audit trail.