**Purpose:**

The CompareDB program will upgrade the TKSQl database to the most updated SQLDATASET without the need of the weekly updates and scripts. It would ease the upgrade procedure and minimize the errors.

Environment:

TK-SQL

Required Program Files:

COMPAREDB.exe July 27, 2004 and later.
SQLDATASET The most updated database at the time of the upgrade.

Stored procedures (See Appendix):

Update_SysTables_Select_Param_Sysnames.sql August 2, 2004 and later.

What is the CompareDB program?

1. The CompareDB programs compares 2 TKSQl databases and upgrades the structure of a destination database according to a source database.
2. The CompareDB program is "independent" and does not require a program or a table from TKSQl.
3. When running the program, you will need to select a database as a 'Source' and a 'Destination' database for comparison. The program will compare the databases and will present the differences in a table.
4. After the comparison, you will be able to run the upgrade from the same screen to match the structure of the destination database to the source database.

General Steps:

1. Backup the customer's live TKSQl database.
2. Create a new SQL Database called SQLDATASET through Enterprise Manager and Restore the new, clean database (SQLDATASET) from the xDrive.
3. Run CompareDB.exe
4. Update system's tables (e.g. Errors, MES80 etc), Param, Select, Sysnames by using the script.
5. Copy the updated TKSQl programs from the XDrive to the TKSQl directory, to match the SQLDATASET (The source database) and register it.
(As required, the SQLDATASET and the TKSQl programs should be from the same update week on the xDrive).

Note:

1. You must run the CompareDB under 'Administrator' login to the MS-SQL.
2. You must have MS-SQL administrative tools (Query Analyzer and Enterprise Manager) on the PC you run the program from.
3. In WIN95, WIN98 and WINME you will not be able to search for MS-SQL databases from the CompareDB program.



Running CompareDB:

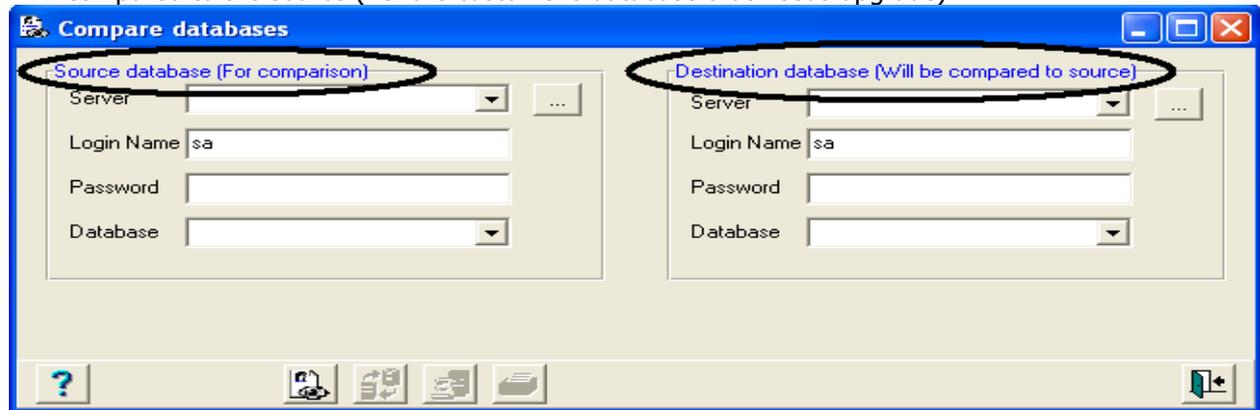
SQLDATASET Restore:

The SQLDATASET is the source database for comparison and you should use the most updated SQLDATASET that you can find on the XDrive:

1. Load the MS-SQL Enterprise Manager.
2. Create a new database called 'SQLDATASET'
3. Restore the latest database (SQLDATASET) from the xDrive.

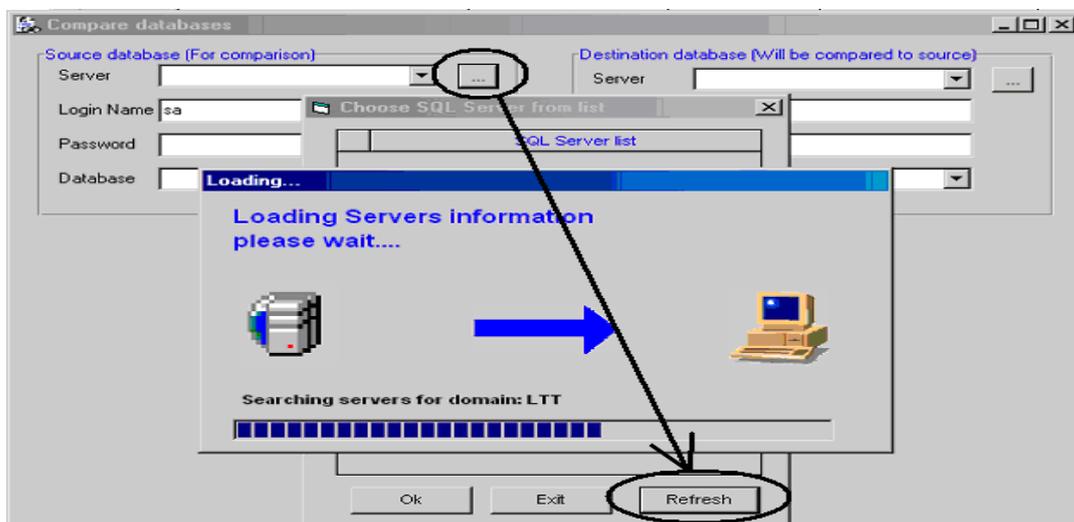
Run CompareDB:

1. Create a backup of the customer's database.
2. Run CompareDB.EXE The 'Compare Databases' window will be opened.
3. On the top-left part of the window you will select the 'Source' database for comparison (i.e. SQLDATASET). On the top-right part you will select the 'Destination' database that will be compared to the source (i.e. the customer's database that needs upgrade).



4. When running CompareDB for the first time, the list of the MS-SQL servers ('Server' field) will be empty. To select a server for the first time you should type its name in the Server's field or click on the 'Browse' button and select 'Refresh'. The program will scan the network and will display all the available MS-SQL servers. (The list of the servers will be written to the file ALLSRV.txt saved in the directory of the program).

NOTE: In WIN95, WIN98 and WINME you will not be able to search for MS-SQL databases and will have to type the server's name in the Server's field.



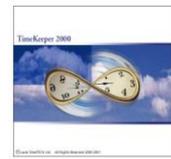


- After selecting the server with the source database, make sure to use the Login name and Password of an administrator and click 'Connect' to receive the list of the available databases:
- Select SQLDATASET database as the source for comparison, and on the same principal select the destination database i.e. the customer's database (e.g. TKSQL)

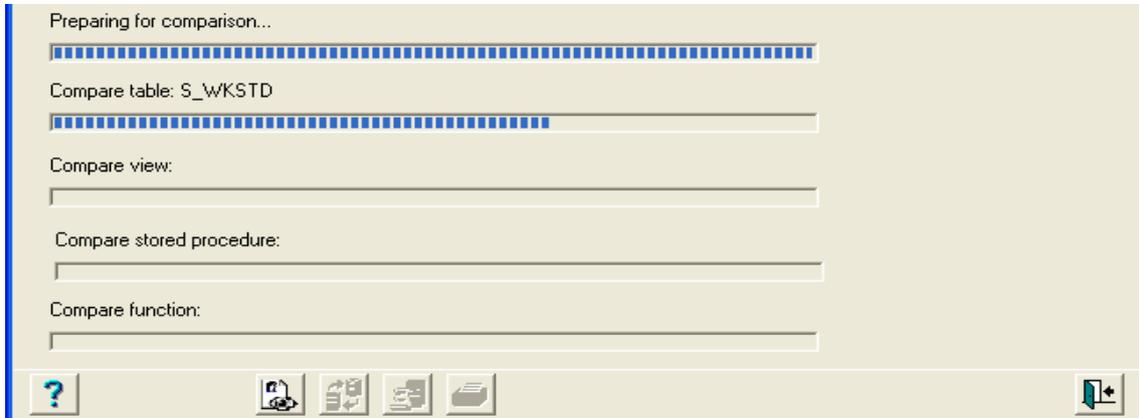
The screenshot shows the 'Compare databases' dialog box. It is divided into two main sections: 'Source database (For comparison)' and 'Destination database (Will be compared to source)'. Each section contains fields for 'Server', 'Login Name', 'Password', and 'Database'. In the source section, the Server is 'SHLOMIT', Login Name is 'sa', Password is empty, and Database is 'SQLDATASET'. In the destination section, the Server is 'GIORA', Login Name is 'sa', Password is empty, and Database is 'TimeKeeper-MAIN'. There are '...' buttons next to the Server dropdowns.

- Now that the source and destination databases are selected, run the comparison using the 'Compare' button on the bottom of the window:

This screenshot is identical to the previous one, showing the 'Compare databases' dialog box with the same configuration. The 'Compare' button, located in the bottom toolbar of the dialog, is circled in red to indicate it should be clicked to run the comparison.



8. The comparison will start running and at the end of it, a table of the detected differences will be displayed:



Items	Source Database	Destination Database	Number of differences detected	
Tables	294	265	887	Details
Views	8	6	2	Details
Stored Procedure	1141	974	253	Details
User Functions	57	54	5	Details

9. By clicking on the 'Details' link on the side of the number of differences, you will open a table with the reasons for the differences:

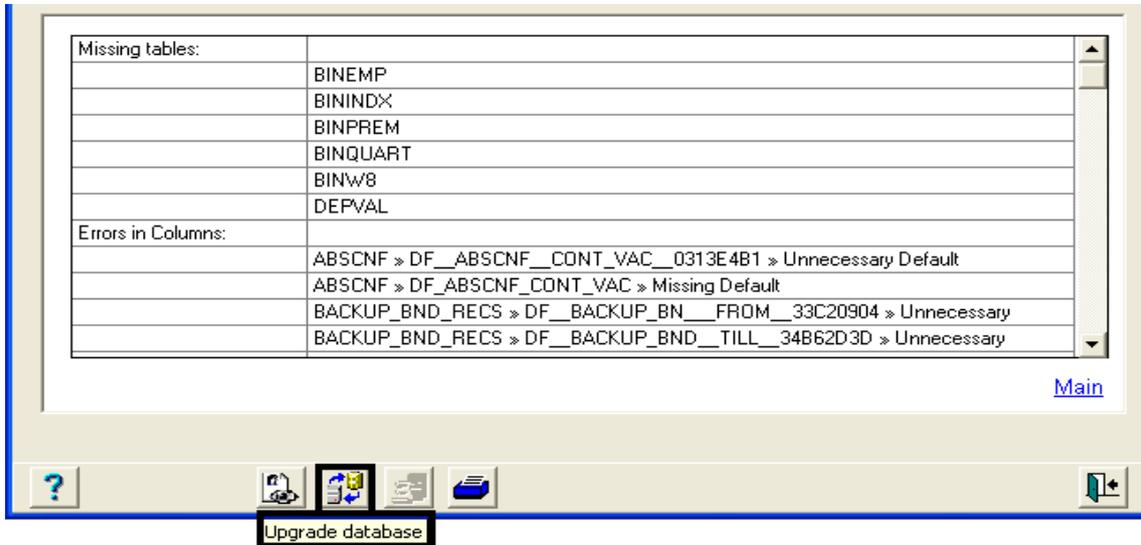
Missing tables:	BINEMP
	BININDX
	BINPREM
	BINQUART
	BINw8
	DEPVAL
Errors in Columns:	ABSCNF » DF_ABSCNF_CONT_VAC_0313E4B1 » Unnecessary Default
	ABSCNF » DF_ABSCNF_CONT_VAC » Missing Default
	BACKUP_BND_RECS » DF_BACKUP_BN_FROM_33C20904 » Unnecessary
	BACKUP_BND_RECS » DF_BACKUP_BND_TILL_34B62D3D » Unnecessary

[Main](#)

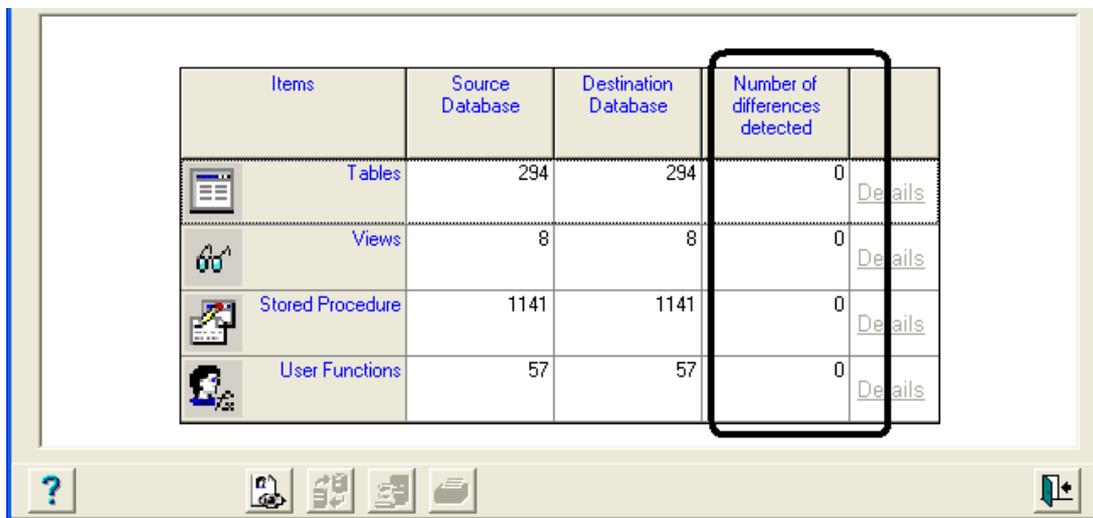
A click on Main will return you to the main comparison table.



In order to update the destination database with the differences that were detected, please click on the marked 'Upgrade Database' button:



10. At the end of the upgrade, the program will re-run the comparison automatically and will display the differences table again. If all differences were fixed, the column with the 'Number of differences detected' will contain '0' in all rows. If there will be still differences, re-run both compare and the upgrade.



NOTE:

- 1. If the program still detects differences after the second run of compare & upgrade, it means that the program cannot solve certain differences. In this case, please send the database to Lavie TimeTECH to be tested.**
- 2. Sometimes, while upgrading, an error message will be received on a procedure the program was attempting to do with no success. Keep a screenshot of the error message and click 'OK' to continue the upgrade. As the program will probably display differences after the first run with the errors, most of the chances are that a second run will solve the problem, and the error will not be displayed at the second run. If the error messages still appear, please send the database with the error's screenshot to Lavie.**

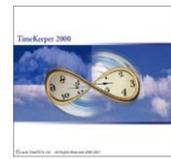


The CompareDB program does the following:

1. Add a missing table.
2. Add a missing index in a table.
3. Update an index in a table
4. Delete an unnecessary index from a table
5. Add a missing primary key to a table
6. Update a primary key in a table
7. Delete an unnecessary default value from a column in a table.
8. Add a missing default value to a column in a table
9. Update a value type in a column of a table e.g. from type TINYINT to INT, or from VARCHAR(10) to VARCHAR(20)
10. Add a missing column to the end of a table
11. Add a missing column to the middle of a table ONLY when the table is empty
12. Add a missing stored procedure
13. Update a stored procedure
14. Add a missing VIEW
15. Update a VIEW
16. Add a missing function
17. Update a function

The CompareDB program will NOT do:

1. Add a column in the middle of a table that has records.
2. Update objects that does not belong to the DBO (Database Owner)



Appendix

After upgrading\updating the database using CompareDB, you should run several scripts to update the content of the system's tables of TimeKeeper:

1. Open the Query Analyzer.
2. Select the database to be updated (e.g. Timekeeper-MAIN)



3. Load the script 'Update_SysTables_Select_Param_Sysnames.sql' to the Query Analyzer and run it. **NOTE:** Like the CompareDB program, the script uses the SQLDATASET as a source for the upgrade.

