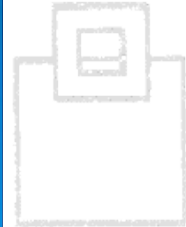
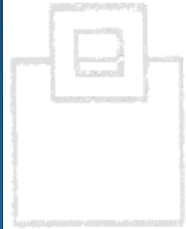
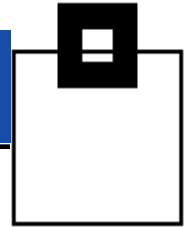


GIVE and TAKE Program





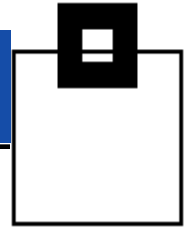
GIVE and TAKE Program for DB2® on z/OS

SOFTWARE ENGINEERING GMBH (SEG) has been in the DB2 product business in Germany for 30 years. The European DB2 community knows and trusts SEG as a partner who works closely with their customers to contribute expertise and to share experiences:

- At local user groups
- In the monthly DB2 Newsletter

SEGUS Inc is our American daughter company and the North American distributor.

The SEG GIVE and TAKE Program was received with enthusiasm in Europe and it is now being extended for the benefit of DB2 z/OS sites in North America.



SQL WorkloadExpert™ for DB2 z/OS (WLX) contains several different “Use Cases.” SEG provided three of these, free of charge, for one month, to various different sites. In return, they received the user’s feedback.

We’d like to share some of the BIF Usage feedback with you now.

- 1 Index Maintenance Costs
- 2 EXPLAIN Suppression
- 3 BIF Usage



GIVE and TAKE Program

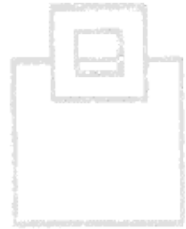
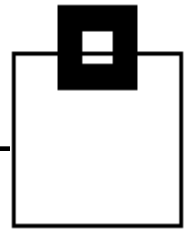
User Feedback

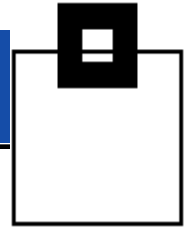
Public Health Care

IT provider for Banks

Car Manufacturer

Insurance





One of Germany's leading IT Providers for Public Health Care

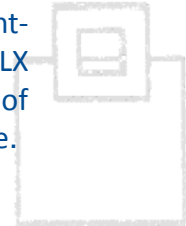
“The question: Where’s the BIF?” Is answered immediately, and the SQL is categorized and displayed. The full SQL text is displayed - even for dynamic SQL.”



Unlike the analyses we had previously conducted using Omegamon, it was not necessary, when using WLX, to collect SMF data for more than 12 months prior to the migration.

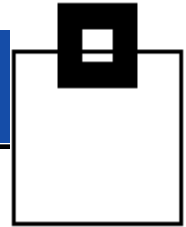


With WLX you don’t even need SMF data. The straight-forward approach that WLX takes saves huge amounts of time, manpower, and storage.



- . The question: Where’s the BIF?” Is answered immediately,
- . The SQL is categorized and displayed.
- . The full SQL text is displayed - even for dynamic SQL.





A German Insurance Company

New DB2 versions requires a complete analysis of all SQLs used in the system.



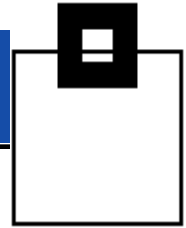
When new versions of DB2 are developed, there can be incompatibilities with older versions.

IBM always announces these well in advance. The resulting activities for the DB2 Systems Programmer initially form the main focus of migration planning. As the planning progresses, the topic of incompatibilities becomes extremely important.

The framework for lifting the relevant information from the systems is provided in IBM's documentation (Traces, IFCIDs, etc.) However it remains up to each installation to establish suitable processes for interpreting the data.

In order to ensure that Applications function correctly, the necessary changes must be planned for and implemented. It's not enough to pass information along and put the responsibility on the Application Developers. Rather, all affected components must be pinpointed in order to explicitly address their adaptation. This can only be accomplished via a complete analysis of all SQLs used in the system.

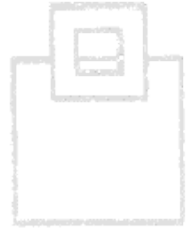




A German Insurance Company

“WLX (BIF-Usage) offers a well-rounded all-in-one solution: data collection, thoroughness, and presentation”.

As a participant of the May 2015 GSE-Working Group BDB2D (DB2 Systems Administration) in Düsseldorf, we had the great pleasure of being accepted into the 3rd phase of SEG’s GIVE and TAKE Program: BIF-Usage. (This is only one of WLX’s Use Cases.)



Our WLX experience from a Systems viewpoint

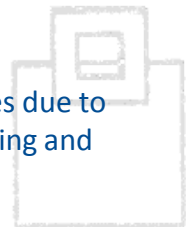
- The installation was uncomplicated and was finished within a few hours.
- WLX proved to be extremely robust in daily use.
- The use of resources was negligible.

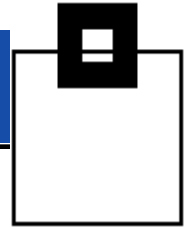
Results of utilizing the BIF-Usage Use Case

- Just a couple of minutes of collecting data was enough to obtain extremely useful results.
- The graphical user interface is intuitive and offers export facilities for using Microsoft Office tools.
- In addition, the open interface allows the integration of Batch automation to process the results.
- The meaningful results can be provided to the Applications Development Team in order to ensure that the version migration will be conducted in a qualified and purposeful manner.



WLX provides transparency around the expenditure necessary for changes due to version incompatibilities. It also provides a realistic expectation for planning and execution of the required changes.





One of the world's leading Car Manufacturers

“WLX biggest strength lies in its automatic capture of the SQL text and where it is found - especially in the area of very “fleeting” dynamic SQL”



BIF incompatibilities pose a problem that should not be underestimated.

Depending on the certain case, programs can abend or – what’s much worse – complete but deliver wrong results.

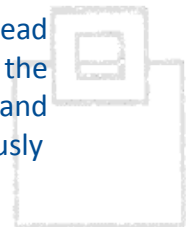
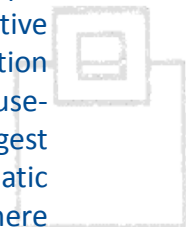
The effects of this are difficult to estimate and could cause immense damage as a consequence.

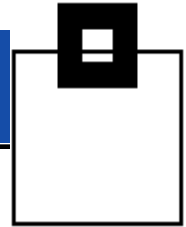
In an enterprise with several 100,000 Packages and several Billion static and dynamic SQL calls daily, only a tool-supported comprehensive method for identifying, recording, categorizing, exploring and communicating these risk factors is suitable.

Of all tools tested, WLX from SOFTWARE ENGINEERING fulfils these requirements the most extensively.

In addition to the simple installation, robustness, intuitive operability, and good integration with external tools and house-internal procedures, its biggest strength lies in its automatic capture of the SQL text and where it is found - especially in the area of very “fleeting” dynamic SQL.

It creates little to no overhead which could influence the Applications, as the trace data and the SQL cache work asynchronously





One of the largest IT Providers for banks in Germany

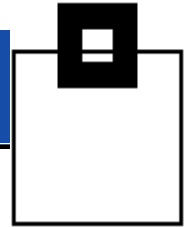
“We preferred a real-time-methodology (via OPx buffers) which is provided by the “BIF-Usage” Use Case of SQL WorkloadExpert for DB2 z/OS (WLX)”

Our first choice to check “Where’s the BIF?” was to use SAS/MXG and, in parallel, MAINVIEW to help us to locate all BIF occurrences. Being a large company, we have products in place from nearly all of the major software vendors. With the help of SAS/MXG we ran our SMF analyses, as we had to first analyze all SMF and then, in a second step, attempt to tie it to a particular SQL statement. MAINVIEW offered the advantage of providing the initial analysis in the product, but further manual work was required.

1. **Locating the BIFs** to show the ICI (but not the SQL-Statements.)
2. **Static SQL:** Using “cut and paste” we copied the statement-ID, package and collection-ID from one panel to get the statement text in a second panel. This required a great deal of manual effort and was extremely time-consuming.
3. **Dynamic SQL:** We were able to save the DSC data with EXPLAIN at regular intervals, but the probability was high that many statements had already been flushed from the cache and were not properly captured. This means that the analysis was incomplete and therefore practically useless.

Conclusion: Our Database Competence Center, (DB-CC), which is situated within the Application Development division, found both methods of dealing with SMF records unusable because of the extensive manual interventions required, low accuracy, and almost no automation. We preferred a real-time-methodology (via OPx buffers) which is provided by the “BIF-Usage” Use Case of SQL WorkloadExpert for DB2 z/OS (WLX).





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“After implementing the WLX methodology, the overhead for the DBA group trended towards zero”.

Using the WLX methodology, we didn't lose any static or dynamic SQL. The WLX-GUI (which works in IBM Datastudio or native Eclipse) “BIF-Usage (standard-mode)” provided the desired results with only 3 clicks. These results were then easily exported to Excel.

We also tried the “BIF-Usage (expanded-mode),” which shows all results with one click. The export to Excel was then used as an additional check list. The overall opinion, was that it was very useful and easy to use.

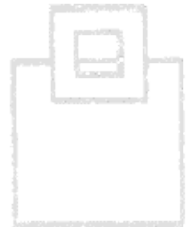
One of the features that we really liked, was the ability to enter comments in a GUI/SPUFI field, allowing for annotations, comments and remarks regarding the progress.

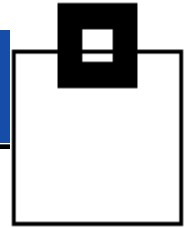


It was then very easy to achieve the desired degree of automation into Tivoli Workload Scheduler (TWS), which was attained via a batch API. We simply scheduled the nightly analysis.

Using this type of automation, we could directly provide the Database Competence Center with the necessary information required for their work on BIFs. The DB-CC drives the evaluation and the possible changes to the SQL to the developers.

After implementing this procedure, the overhead for the DBA group trended towards zero.





EXPLAIN Suppression

Index Maintenance Costs

2

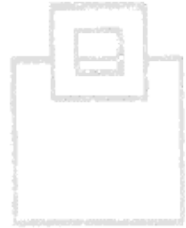
EXPLAIN Suppression

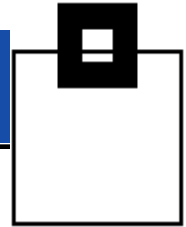
1

BIF Usage

3

BIF Usage





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