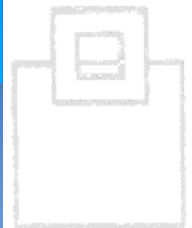
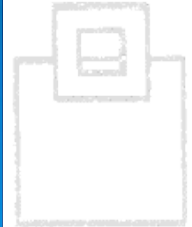
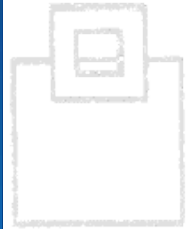


GIVE and TAKE Program

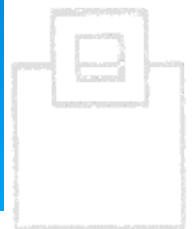
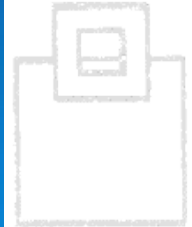
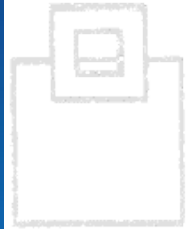
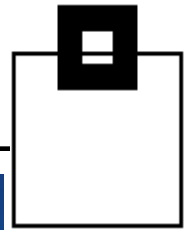


GIVE and TAKE Program

Index Maintenance Costs

EXPLAIN suppression

BIF Usage



AGENDA

GIVE and TAKE

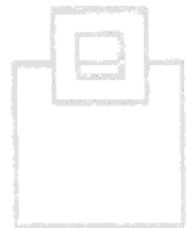
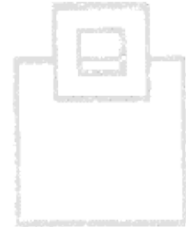
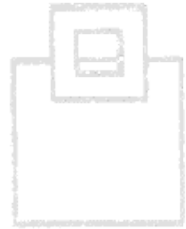
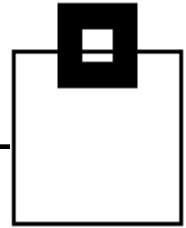
Program

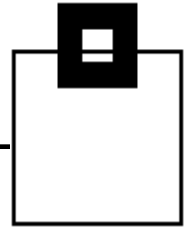
Inspiring experiences



What is it?


- 1 Index Maintenance costs
- 2 EXPLAIN suppression
- 3 BIF Usage





SOFTWARE ENGINEERING GMBH initiated a sharing program for their customers and other GSE conference attendees in Germany.

The European program met with so much success, that SEGUS is now offering these benefits in North America too.

 **SQL WorkloadExpert for DB2 z/OS (WLX)** is an SQL Workload Warehouse and contains several different “Use Cases”.

For a limited time only, we are giving away* three of these, (Index Maintenance Costs, EXPLAIN Suppression and BIF Usage), on a first come first served basis.

What would we like in return? A short report about the results, to be discussed at future user group meetings.

*Free of charge, no obligations

AGENDA

GIVE and TAKE

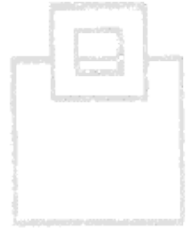
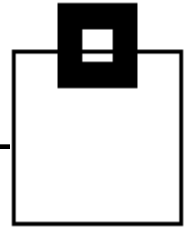
Program

Inspiring experiences

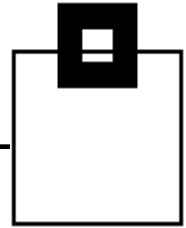


What is it?

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

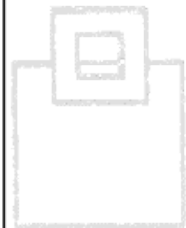
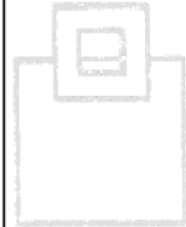
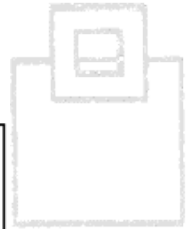
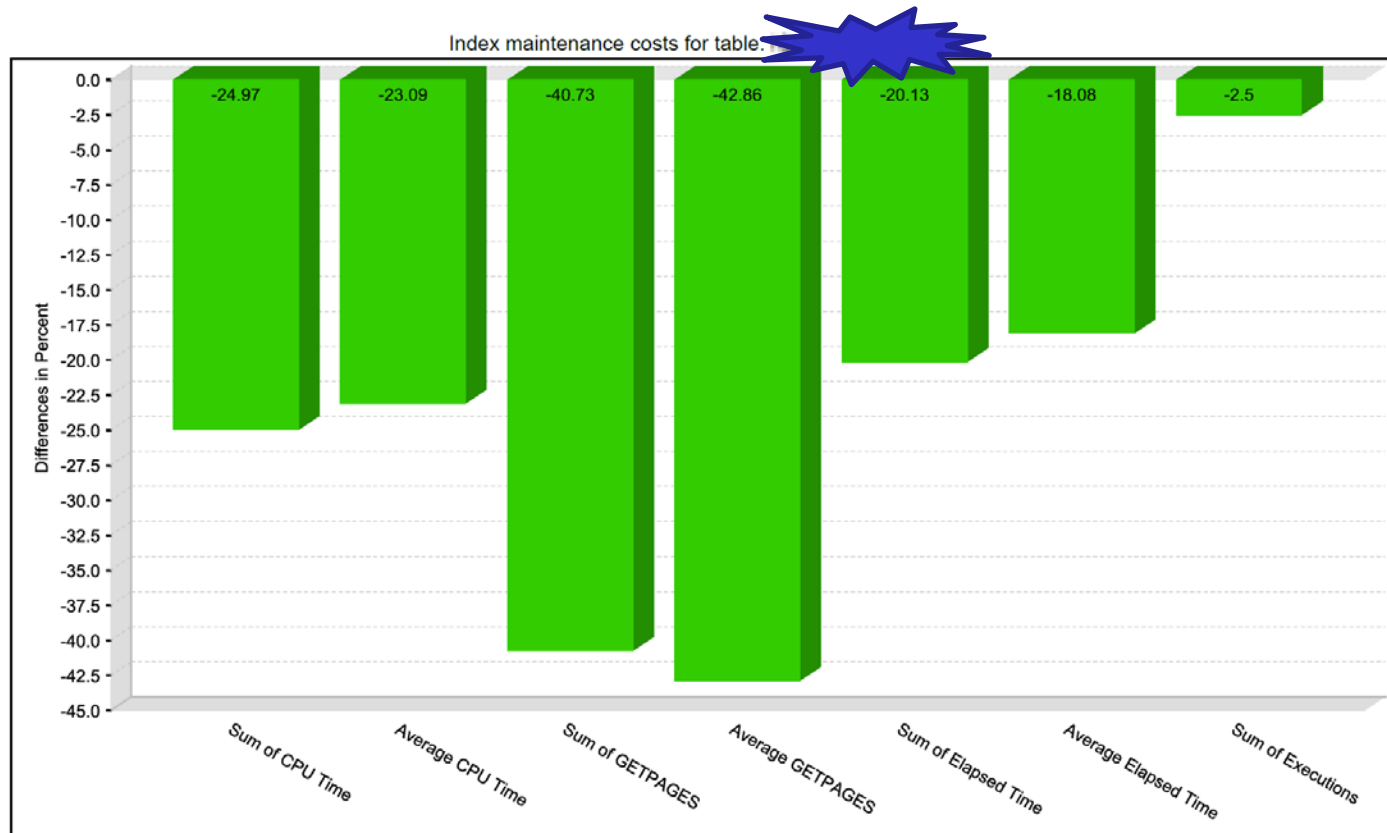


Index Maintenance Costs

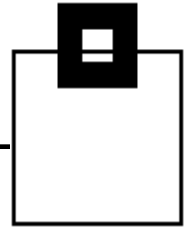


Almost all companies showed positive results for indexes that were created

WLX Report

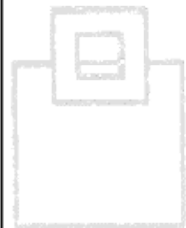
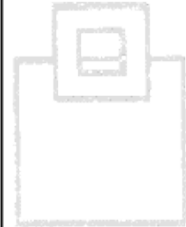
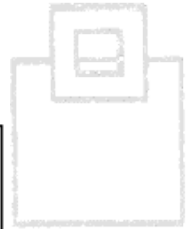
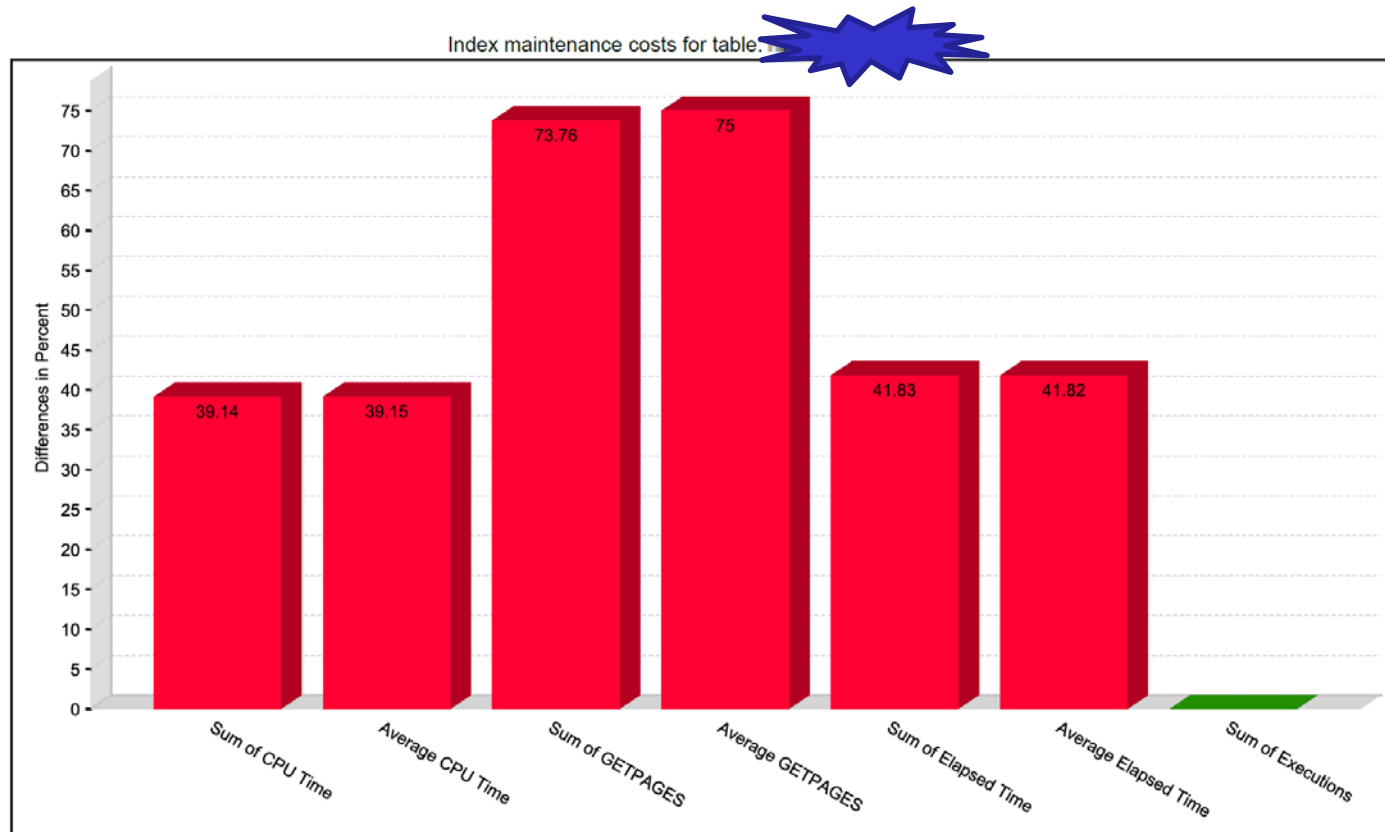


Index Maintenance Costs



Of course there are always exceptions!

WLX Report

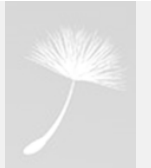


AGENDA

GIVE and TAKE

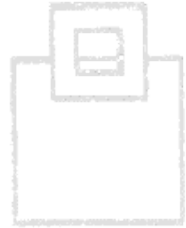
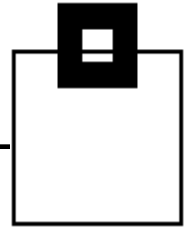
Program

Inspiring experiences

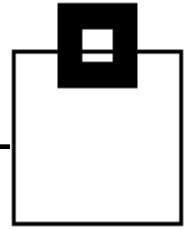


What is it?

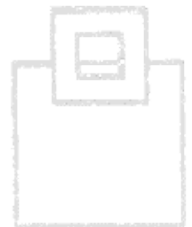
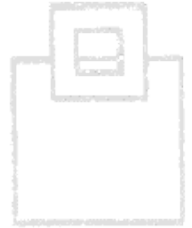
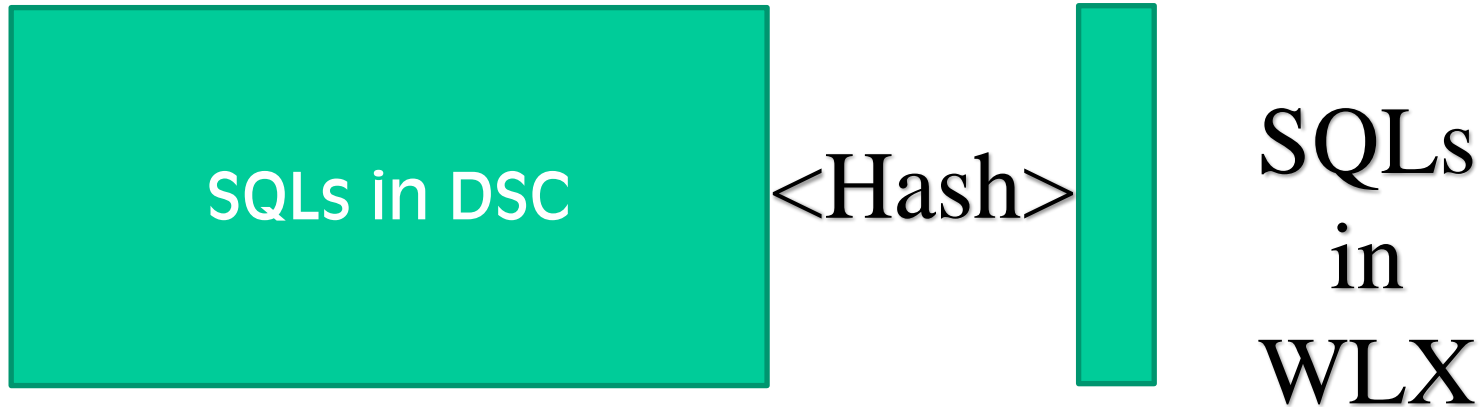
- 1 Index Maintenance costs
- 2 **EXPLAIN** Suppression
- 3 BIF Usage



EXPLAIN Suppression

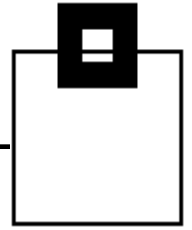


The EXPLAIN Suppression Use Case was a great success!



It showed that about 10% of SQLs are actually “duplicates” and don’t need to be EXPLAINED again. By suppressing the multiple EXPLAINS, dramatic boosts to performance were achieved. It became possible to aggregate even more data for analysis.

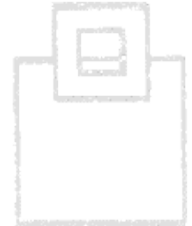
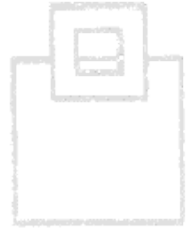
EXPLAIN Suppression



Remember: EXPLAIN Suppression gets better the longer you run with it!

Here are some comparative numbers and timings based on *single* extracts and hashes (Of course this is a “worst case” scenario!):

SQLs Classic	SQLs with Suppression	SQLs Saved	Elapsed time Saved
90,853	54,272	36,581	9 Minutes
14,405	1,554	12,851	83 Seconds
10,542	1,844	8,698	2 Minutes
2,411	1,014	1,397	41 Seconds
10,241	6,920	3,321	30 Seconds
30,537	14,490	16,047	2 Minutes
93,283	17,477	75,806	20 Minutes



AGENDA

GIVE and TAKE

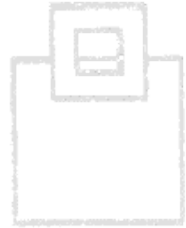
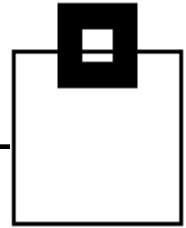
Program

Inspiring experiences



What is it?

- 1 Index Maintenance costs
- 2 EXPLAIN Suppression
- 3 **BIF Usage**



BIF Usage

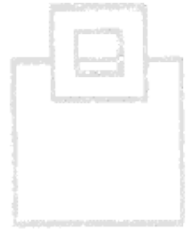
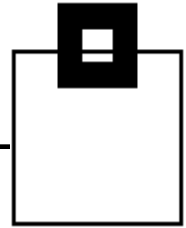
Built-in-Functions are used everywhere

The big problems arise, when migrating to a new DB2 version, as the BIFs are not always compatible. This can lead to unexpected and undesired results.

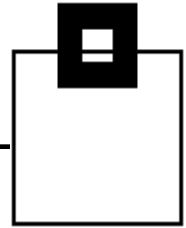
In the past, the problem was always to find out – ahead of time - who is issuing which “changed” BIF and from where, and then fixing the occurrences before it hurt the migration.

IBM has introduced a couple of new IFCIDS (366 for 10/11 and 376 for 11) to ease the pain of finding these BIFs. But now the problems are wading through the extreme amount of data produced, and the difficulty of near-time analysis to track down BIFs within dynamic SQL.

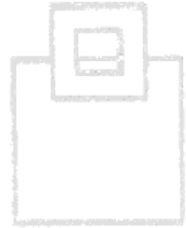
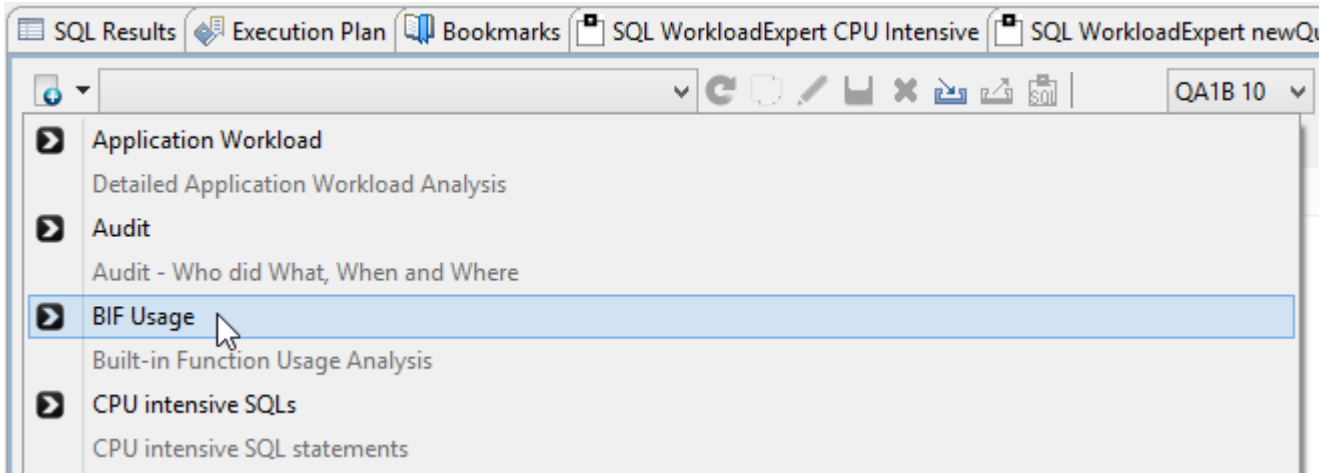
These problems have now been solved with the BIF Usage Use Case.



BiF Usage



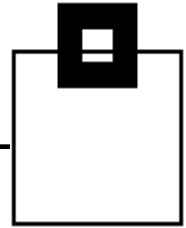
In WLX, select BIF Usage:

A screenshot of the SQL Workload Expert (WLX) application showing the results of a BIF usage query. The 'Execute query' button is highlighted in the toolbar. The results are displayed in a table with columns: WLX Key, Collection ID, Package, and Count. A green arrow points to the last row of the table.

WLX Key	Collection ID	Package	Count
2015-02-09-10.01.01.177164		IQADBACP	8
2015-02-09-10.01.01.177164		IQAXPLN	8
2015-02-09-10.01.01.177164	IQA_COLLECTION_...	IQAXPLN	8
2015-02-09-10.01.01.177164	DSNESPUR	DSNESM68	3
2015-02-09-10.01.01.177164	IQA_COLLECTION_...	TESTPGM	2
2015-02-09-13.57.55.867719	IQA_COLLECTION_...	IQAXPLN	12
2015-02-09-13.57.55.867719	DSNESPUR	DSNESM68	11

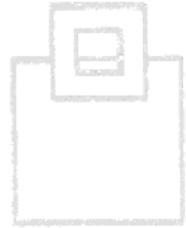


BiF Usage



And drill down:

WLX Key	Collection ID	Package	ICI number	Count	Reason
2015-02-09-13.57.55.867719	DSNESPUR	DSNESM68	5	10	Keyword CUBE used as unqualified UDF
2015-02-09-13.57.55.867719	DSNESPUR	DSNESM68	1	1	DB2 9 CHAR Usage



WLX Key	Collection ID	Package	ICI number	Reason	WLX DB2 SSID	Statement ID	Statement Origin	BIF_TIMESTAMP
2015-02-09-13.57.55.867719	DSNESPUR	DSNESPUR	1	DB2 9 CHAR Usage	QA1B	161	D	2015-02-09-14.55.26

- Report
- Copy SQL statement to clipboard
- Open compare view
- Show SQL text

BIF Usage

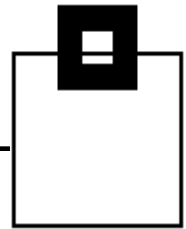
Connection profile

Type:

```
SELECT CHAR(1.0)  
FROM SYSIBM.SYSDUMMY1
```

To find a Decimal value

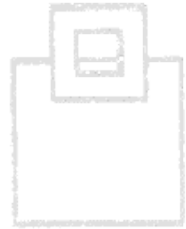
BiF Usage



Or, using the new BIF Plus view:



WLX Key	Collection ID	Package	ICI numbe...	Reason	WLX DB2
2015-03-04-13.48.32.142444	MDB2VNEX_TEST	O2TESTB	1	DB2 9 CHAR Usage	QA1B
2015-03-04-13.48.32.142444	MDB2VNEX_TEST	O2TESTB	5	Keyword CUBE used as unqualified UDF	QA1B



Statement ID ...	Statement Origin ...	BIF Timestamp	Statement Type ...	Section number ...	Statement number...
2,021,332	S	2015-03-05-10.41.50.808437	S	3	185
2,021,334	S	2015-03-05-11.01.21.342746	S	5	205

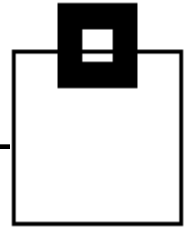


Plan name ...	Package CONTOKE...	Package version	Statement Timestamp	Transaction name
MVNXPLAN	19D32EF20563E916		2015-03-05-10.41.44.127816	
DSNBIND	19D32EF20563E916		2015-03-05-10.41.44.128764	



(Statement text off screen at right)

Dare to Share your Results?



Who wants to use these tools for 30 days?

Contact:

SEGUS Inc
14151 Park Meadow Drive
Chantilly, VA 20151

db2info@segus.com

