

## **SQL WorkloadExpert for Db2 z/OS** What users want to do with a SQL Workload Warehouse

### DO MORE WITH LESS

Increases your knowledge about your core business

View to understand easily how a specific, a group, or all applications utilize your machine

Builds your company specific SQL Workload Warehouse on a daily, weekly, monthly, quarterly basis

Chooses a period of time you find suitable for your company to keep the statement text and later on just the KPIs


Finds slots for REORG without negative impacts for end user services

Eliminates unnecessary administration and maintenance costs for unused SQL and objects

### USE CASES

- Taste one "use case" ... and you can't resist.
- Appetite comes with eating. It's moreish.
- L'appétit vient en mangeant.




 **SQL WorkloadExpert** (WLX) is designed to collect all dynamic and static SQL from the enterprise for Db2 z/OS via snaps of the EDM Pool and DSC. This enables the measurement of more than 30 KPIs about resource consumption and performance. It also has the powerful capability to compare two snaps (before and after) and also to compare the quality of SQL via dynamic EXPLAIN. All the SQL will be aggregated to enable drill-downs. WLX interfaces with BIX and SPX so that Db2 access paths can be evaluated, compared and tuned.

### CUSTOMER REQUIREMENTS

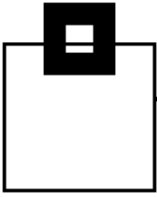
You can see that "The sky is the limit" but think about it for a while. "What would you do if you had all SQL from one year in a SQL Workload Warehouse, let's assume for 3 months with statement text and later on just the KPIs?"

### USE CASES

- **Use Case 1:** Application Workload Analysis – Which machine load is produced by a certain application?
- **"Use Case 2":** Workload-Change Problem-Detection and Trending Compare of CPU, I/O, execution rates, current KPIs and deltas – Calculated and summarized to the costs of several apps (via Compare view).
- **Use Case 3:** Object Quiet Times for Maintenance (REORG)
- **Use case 4:** AUDIT (Who did What Where and When) – DDL, DML, DCL
- **Use Case 5:** Not referenced Objects (Tables, Indexes, and Tablespaces)
- **Use Case 6:** Not referenced Packages
- **Use Case 7:** Forecasting of possible performance improvements in dynamic SQL by exchanging literals with parameter markers
- **Use Case 8:** Disc Problem Detection – I/O Rates
- **Use Case 10:** Multi-Row Fetch Candidate Detection
- **Use Case 11:** SQL KPIs – Background Noise and Exceptions
- **Use Case 12:** SELECT Only Detection – LOCKSIZE tuning
- **Use Case 13:** Delay Detection
- **Use Case 15:** Visual – EXPLAIN Link (webve: plug-in)
- **Use Case 16:** SPX ( **SQL PerformanceExpert/SPX-PLUG-IN**)

■ outside standard delivery

2018-10



## DO MORE WITH LESS

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Detects multi-row fetch candidates easily

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Uses the optimized family of performance tools from SEG:

▣ **SPX**, ▣ **BIX** (enhanced with Db2 hardware simulation) and ▣ **RTDX**

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Integrates in IBM recommended company standards like Eclipse native, IBM DataStudio or IBM Rational

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STAND ALONE available:

▣ **WLX - BIF/ICI Detection**  
▣ **WLX - Audit**

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Discover all future Incompatibilities before they cause problems

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Continuous analysis and discovery especially important for 3rd party Software

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Enables long lead-time correction processes to be planned and launched

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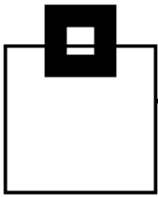
Also as a Freeware component to allow quick and easy testing of the current situation

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- ▣ **Use Case 17:** RTDX (▣ **Real Time DBAExpert**) REORG Suppression + Detection
- ▣ **Use Case 18:** Eager vs. Lazy Loader Detection (JPA-Java Persistence API)
- ▣ **Use case 19:** Object usage
- ▣ **Use case 20:** Offline Performance Database (LUW)
- ▣ **Use case 21:** Up and Down Scaling SQL Workloads
- ▣ **Use case 22:** Same SQL on Multiple Schemas
- ▣ **Use case 23:** DSC Flush Analysis
- ▣ **Use case 24:** SQL Text Analysis
- ▣ **Use case 26:** CLUSTER Index Detection
- ▣ **Use case 27:** Aggregate SQL View
- ▣ **Use case 29:** CPU Intensive Statements
- ▣ **Use case 30:** Index Maintenance Costs
- ▣ **Use Case 31:** Not referenced SQL
- ▣ **Use case 33:** SQL Timeline
- ▣ **Use case 34:** BIF Detection
- ▣ **Use case 35:** BIF/ICI Detection
- ▣ **Use case 37:** PKLIST Problem Detection
- ▣ **Use case 39:** Content Manager System (CMS)
- ▣ **Use case 40:** Utility review
- ▣ **Use case 41:** Bufferpool Overview
- ▣ **Use case 42:** CPU usage of Packages
- ▣ **Use case 43:** Deadlock & Timeout
- ▣ **Use case 45:** Lock Escalation
- ▣ **Use case 46:** Index Page Splits
- ▣ **Use case 47:** GETPAGES Insert-Performance
- ▣ **Use case 48:** Failing Statements
- ▣ **Use case 49:** Old threads

▣ outside standard delivery

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## DO MORE WITH LESS

STAND ALONE available:

### WLX - Audit for Db2 z/OS

STC (64 bit high level ASM)  
Collects all SQL running on  
your PLEX: static and dynamic

Exploits IFI - Technologie

Supports standard AUDIT  
features of the DBMS

Covers all levels of SQL:  
DDL, DML, and DCL

Reports about  
IBM utilities and Db2  
commands,  
Authorization failures

Enables visualization of  
anomalies (SQL usage and  
execution rate)

Supports LEEF standards (Log  
Event Extended Format) and  
SIEM (Security Information &  
Event Management) e.g. IBMs  
zSecure and QRadar, Splunk,  
Alien Vault

For more Information see the

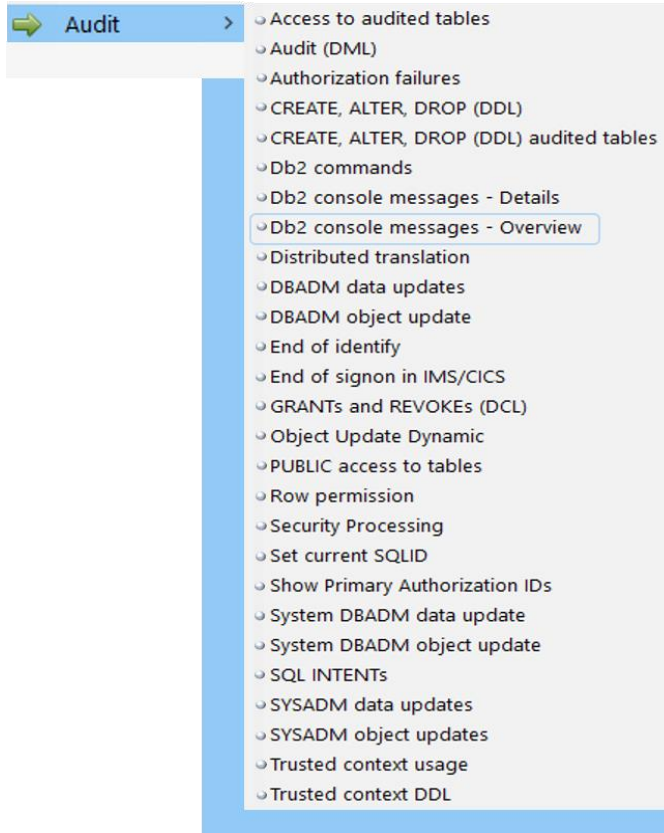
WLX - Audit flyer & page:

- [www.seg.de/media/flyer-wlx-Audit.pdf](http://www.seg.de/media/flyer-wlx-Audit.pdf)

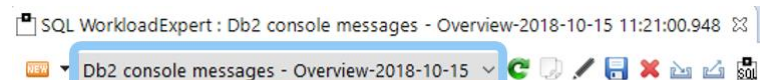
- [www.seg.de/audit](http://www.seg.de/audit)

### WLX - Audit for Db2 z/OS

The Use case 4 - AUDIT (Who did What Where and When)  
gives you the following sub-use cases:



The **Db2 Console messages - Overview**: one of the Audit  
sub-use cases.



WLX Key	WLX DB2 SSID	Db2 message ID	Count
2018-08-24-14.13.04.753159	MEMSB10	DSNB302I	2
2018-08-24-14.13.04.753159	MEMSB10	DSNB315I	2
2018-08-24-14.13.04.753159	MEMSB10	DSNJ001I	4
2018-08-24-14.13.04.753159	MEMSB10	DSNJ002I	4
2018-08-24-14.13.04.753159	MEMSB10	DSNJ003I	2
2018-08-24-14.13.04.753159	MEMSB10	DSNJ139I	2
2018-08-24-14.13.04.753159	MEMSB11	DSNJ001I	4
2018-08-24-14.13.04.753159	MEMSB11	DSNJ002I	4
2018-08-24-14.13.04.753159	MEMSB11	DSNJ003I	2
2018-08-24-14.13.04.753159	MEMSB11	DSNJ139I	2

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