

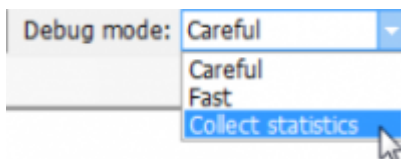
Debugger Collect Statistics example

In the *Collect statistics* mode the debugger collects some statistical information (prepare/execute time, rows affected, indexed/non-indexed reads) for each execution of `SELECT/INSERT/UPDATE/DELETE/MERGE/EXECUTE` statements and calculates total and average values.

Example part 1:

To demonstrate the IBExpert Debugger's *Collect Statistics* mode we have used the IBExpert Demo Database, DB1, and the procedures, `INITALL` and `DELETEALL` with a simple step-by-step illustration. If you would like to follow this example yourself, please first install the IBExpert Demo Database, as described [here](#).

1. Open the DB1 Demo DB.
2. Open the `INITALL` procedure.
3. Click on the toolbar *Debugger* icon (or start using [F8]).
4. Set the Debug mode (using the drop-down list in the Debugger toolbar) to Collect Statistics.



5. Specify the parameter CNT to 1,000.
6. Use [F9] oder click the *Run* button to start. (This may take a few minutes.)
7. Commit. You can view the statistics on the Debugger's Statistics page:

INITALL Performance Analysis SQL Editor Statistics				Statement		Rows affected		Prepare time, sec		Execute time, sec		Indexed reads		Non-indexed reads	
#	Count	Statement	Plan	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
1	1	EXECUTE PROCEDURE DELETEALL		0	0	0,000	0,000	0,094	0,094	0	0	0	0	7492	7492
2	1000	SELECT bt from tmp_fn where id= :Param_0_	PLAN (TMP_FN INDEX (PK_TMP_FN))	1000	1	0,592	0,000	0,077	0,000	1000	1	0	0	0	0
3	1000	SELECT bt from tmp_ln where id= :Param_0_	PLAN (TMP_LN INDEX (PK_TMP_LN))	999	0	0,718	0,000	0,046	0,000	999	0	0	0	0	0
4	1000	SELECT bt from tmp_adr where id= :Param_0_	PLAN (TMP_ADR INDEX (PK_TMP_ADR))	1000	1	0,596	0,000	0,046	0,000	1000	1	0	0	0	0
5	1000	SELECT bt from tmp_city where id= :Param_0_	PLAN (TMP_CITY INDEX (PK_TMP_CITY))	1000	1	0,673	0,000	0,141	0,000	1000	1	0	0	0	0
6	1000	SELECT bt from tmp_state where id= :Param_0_	PLAN (TMP_STATE INDEX (PK_TMP_STATE))	991	0	0,626	0,000	0,062	0,000	991	0	0	0	0	0
7	1000	INSERT INTO CUSTOMER(ID, FIRSTNAME, LASTNAME, ADDRESS1, ...		1000	1	0,955	0,000	1,338	0,001	0	0	0	0	0	0
8	1000	SELECT bt from tmp_titleword where id= :Param_0_	PLAN (TMP_TITLEWORD INDEX (PK_TMP_TITLEW...	1000	1	0,592	0,000	0,156	0,000	1000	1	0	0	0	0
9	1000	SELECT bt from tmp_titleword where id= :Param_0_	PLAN (TMP_TITLEWORD INDEX (PK_TMP_TITLEW...	1000	1	0,718	0,000	0,109	0,000	1000	1	0	0	0	0
10	1000	SELECT bt from tmp_titleword where id= :Param_0_	PLAN (TMP_TITLEWORD INDEX (PK_TMP_TITLEW...	1000	1	0,688	0,000	0,111	0,000	1000	1	0	0	0	0
11	1000	SELECT bt from tmp_fn2 where id= :Param_0_	PLAN (TMP_FN2 INDEX (PK_TMP_FN2))	996	0	0,708	0,000	0,047	0,000	996	0	0	0	0	0
12	1000	SELECT bt from tmp_ln2 where id= :Param_0_	PLAN (TMP_LN2 INDEX (PK_TMP_LN2))	996	0	0,862	0,000	0,122	0,000	996	0	0	0	0	0
13	1000	SELECT bt from tmp_fn2 where id= :Param_0_	PLAN (TMP_FN2 INDEX (PK_TMP_FN2))	998	0	0,564	0,000	0,079	0,000	998	0	0	0	0	0
14	1000	SELECT bt from tmp_ln2 where id= :Param_0_	PLAN (TMP_LN2 INDEX (PK_TMP_LN2))	1000	1	0,496	0,000	0,124	0,000	1000	1	0	0	0	0
15	1000	INSERT INTO PRODUCT(ID, CATEGORY_ID, TITLE, ACTOR, PRICE, S...		1000	1	0,956	0,000	0,692	0,000	0	0	0	0	0	0
16	1000	INSERT INTO INVENTORY(ID, PRODUCT_ID, QUAN_INV_STOCK)VALU...		1000	1	0,000	0,000	1,121	0,001	0	0	0	0	0	0
17	1	EXECUTE PROCEDURE CREATE_MORE_ORDERS		0	0	0,000	0,000	0,687	0,687	15047	15047	1000	1000	1000	1000

Example part 2:

Before proceeding further with the second part of this example, you will need to run the INITALL(1000) once without the Debugger, as the Debugger does not actually write any data, before proceeding with the DB1 DELETEALL procedure as follows:

1. Open the INITALL procedure.
2. Use [F9] oder click the Run button to start.
3. Specify the parameter CNT to 1,000.
4. Commit.
5. Open the DELETEALL procedure.
6. Click on the toolbar Debugger icon (or start using [F8]).
7. Set the Debug mode (using the drop-down list in the Debugger toolbar) to Collect Statistics.
8. Use [F9] and click the *Run* button to start.
9. Go to the Debugger *Statistics* page:

Debugger • db1 • Debug mode: Collect statistics •

DELETEALL Performance Analysis SQL Editor Statistics

Statement			Rows effected		Prepore time, sec		Execute time, sec		Indexed reads		Non-indexed reads		
#	Count	Statement	Plan	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
1	1	DELETE from customer_history	PLAN (CUSTOMER_HISTORY NATURAL)	0	0	0,000	0,000	0,000	0,000	0	0	0	0
2	1	DELETE from orderline	PLAN (ORDERLINE NATURAL)	3492	3492	0,000	0,000	0,016	0,016	0	0	3492	3492
3	1	DELETE from orders	PLAN (ORDERS NATURAL)	1000	1000	0,000	0,000	0,016	0,016	0	0	1000	1000
4	1	DELETE from inventory	PLAN (INVENTORY NATURAL)	1000	1000	0,000	0,000	0,015	0,015	0	0	1000	1000
5	1	DELETE from product	PLAN (PRODUCT NATURAL)	1000	1000	0,000	0,000	0,031	0,031	0	0	1000	1000
6	1	DELETE from customer	PLAN (CUSTOMER NATURAL)	1000	1000	0,000	0,000	0,047	0,047	0	0	1000	1000

10. For each row in the procedure you can now view the plan and time taken, along with further statistical data (indexed reads, non-indexed reads, etc.).
 11. You can now work through the procedure, optimizing those parts that are taking the most time.
- So, now you can get started on the optimization of your own procedures!

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Last update: 2023/09/23 16:10

