



ULT4DB2

USE OF DB2's LOG

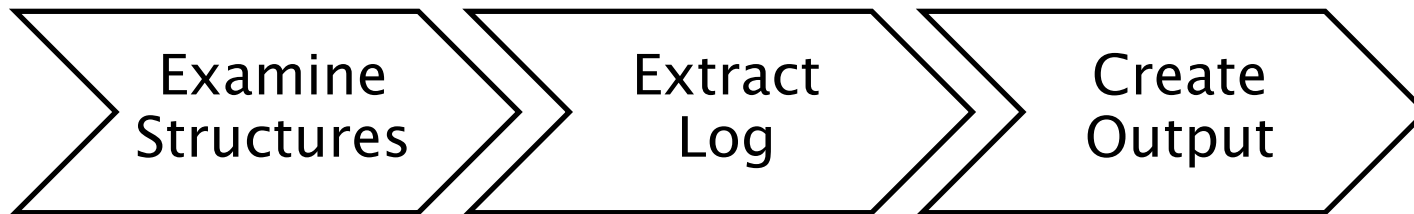
- **Analyze DB2 logs**
Extract log records for a list of tables
- **Generate output from a subset of the log**
Undo Statements/Records
Redo Statements/Records
Reports

What can ULT4DB2 be used for?

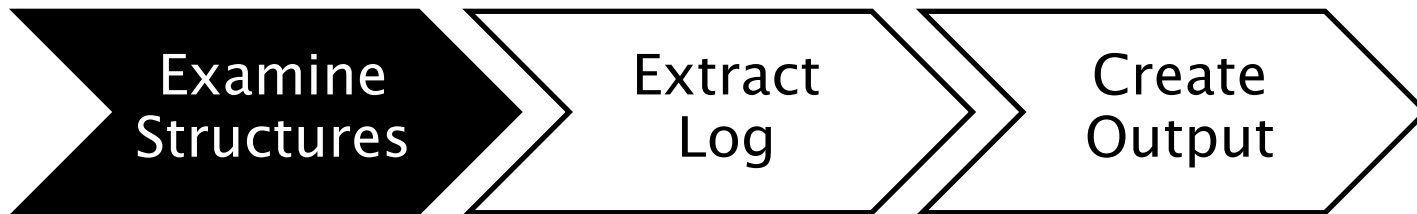
Usage Scenarios

- Data propagation:
Keep multiple tables synchronised
- Auditing:
Show data modifications and users
- Corrections:
Identify and undo selected changes
- Program quality assurance
Monitor abundance by standards

The ULT process



The ULT process



Examine Structures

- **Rule-based**
Structure information is refreshed every time ULT is running
- **Table structures**
Handles added columns or modified data types, handles all encodings
- **Flexible renaming**
Target tables can have different schemas / names
- **Information about image copies**
Access old compression dictionaries

The ULT process



Extract Log

- **Fast log extract engine**

Only keep log records for relevant tables for faster processing

- **Minimize overhead in source system**

Run ULT jobs when system load is low

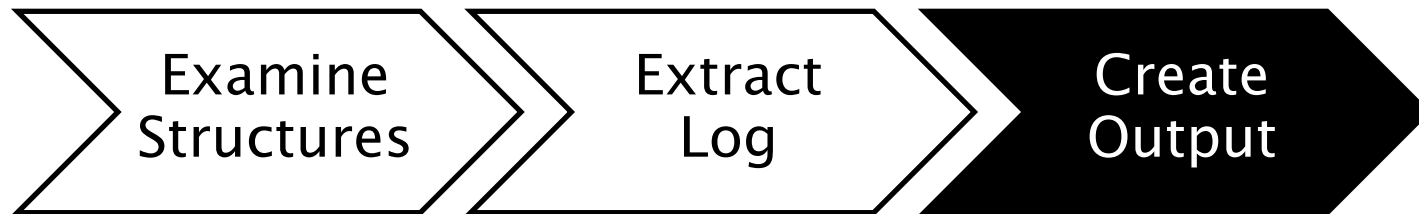
- **Seamless log extraction**

ULT jobs continue processing where last execution finished

- **Flexible**

Start scan at a timestamp, RBA, LRSN, table creation time, image copy timestamp, or end of previous execution

The ULT process



Create Output

- **Flexible output formats**

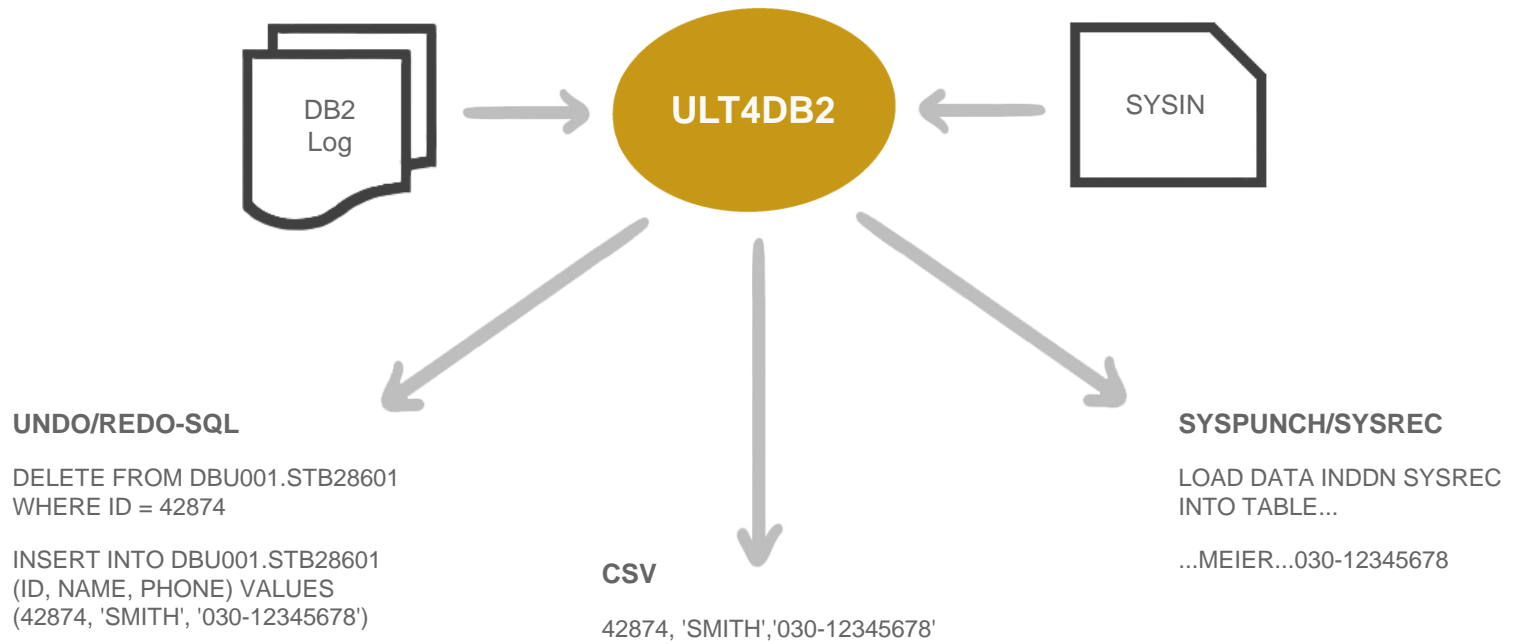
Generate Redo/Undo SQL, SYSREC/SYSPUNCH data sets for the LOAD utility, CSV files

- **Execute generated SQL directly**

Uses prepared statements to increase speed and minimize impact on DSC

- **Generate reports**

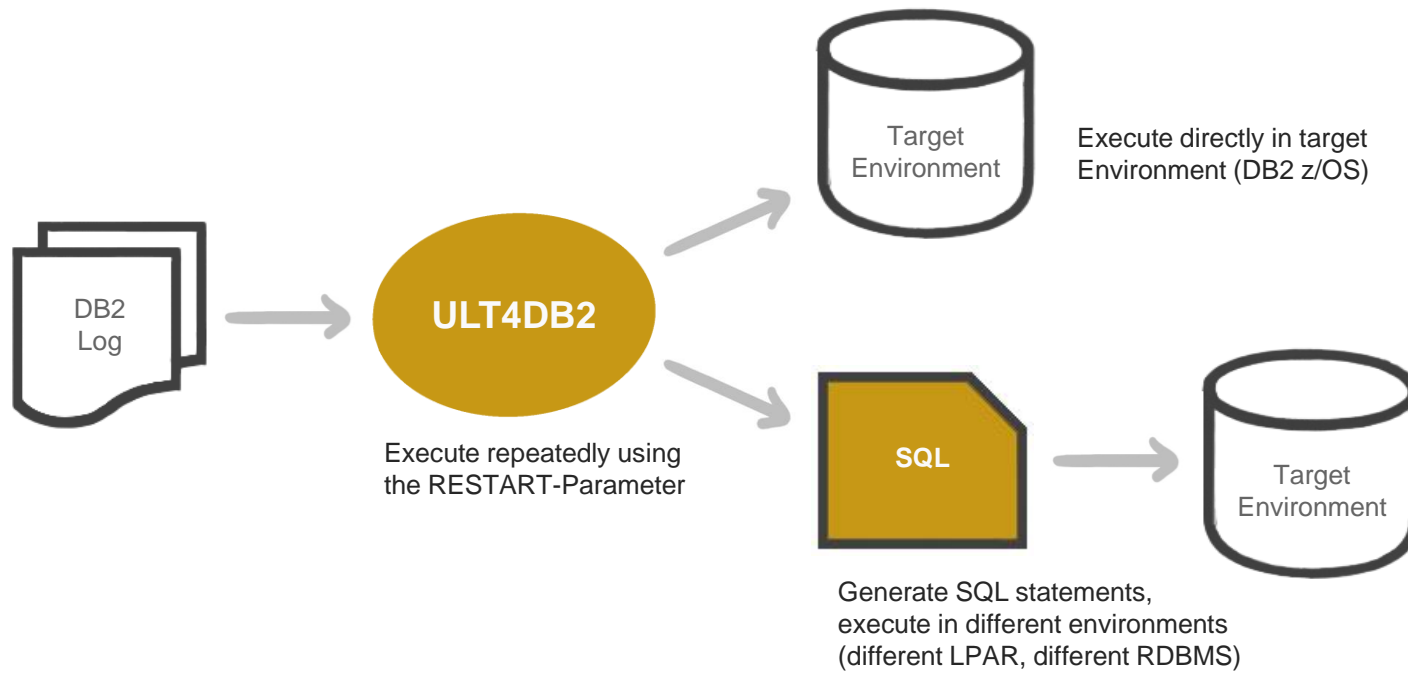
Get information about long running transactions, large rollback operations, quiet periods of time



WHAT DOES ULT DO?

OVERVIEW | SCENARIO

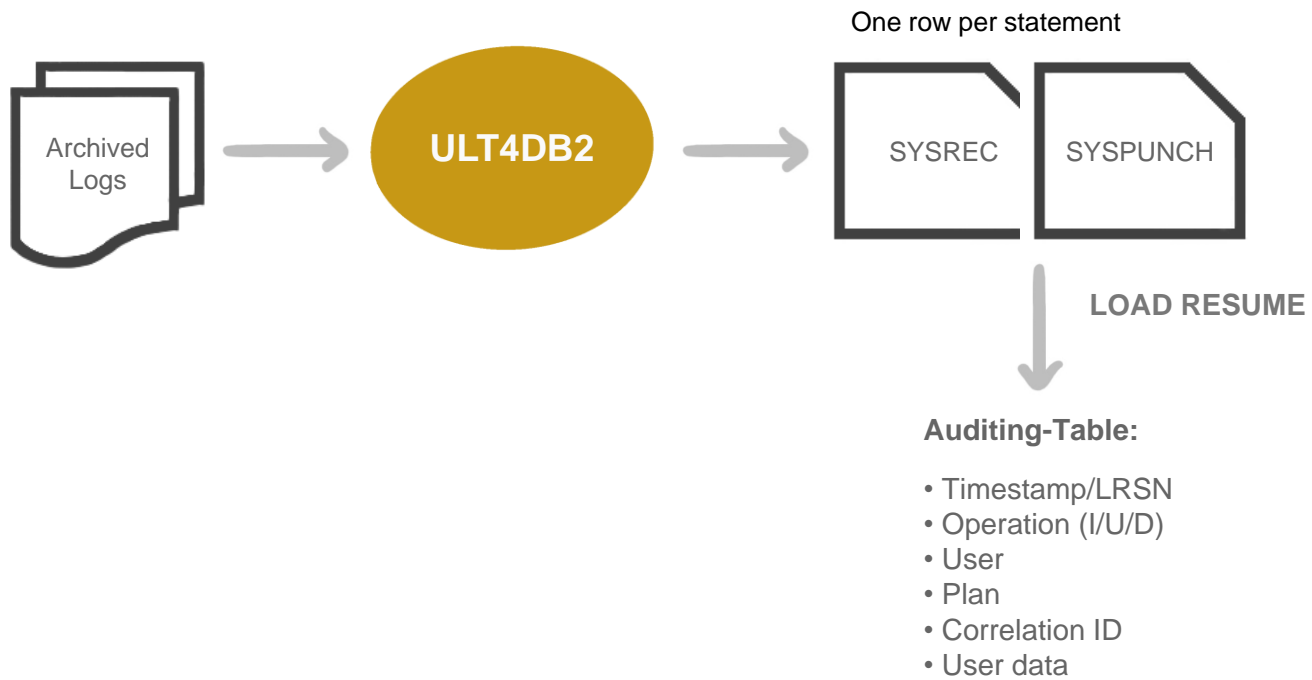
Propagation



WHAT DOES ULT DO?

OVERVIEW | SCENARIO

Auditing



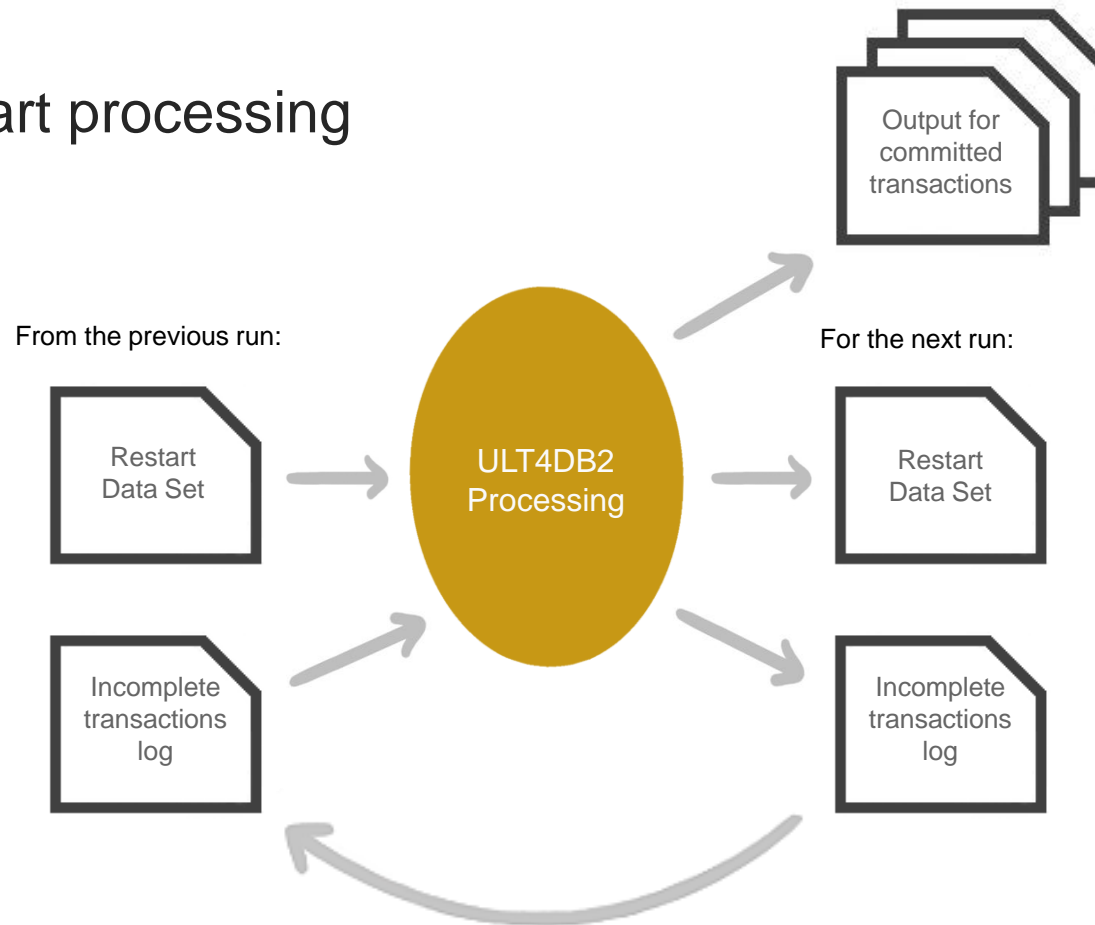
Auditing

TBCREATOR	TBNAME	LRSN	OPERATION	COLUMNS OF ORIGINAL TABLE
DBU001	STB28601	C3D80ACCCB61	I	...
	...			
DBU001	STB28601	C3D80ACCD296	I	...
	...			
DBU001	STB28601	C3D80ACCD9BD	I	...
	...			
DBU001	STB28601	C3D80ACCE0A1	U	...
	...			
DBU001	STB28601	C3D80ACCE746	D	...
	...			
DBU001	STB28601	C3D80ACCF24E	D	...
	...			
DBU001	STB28601	C3D80ACCFD62	U	...
	...			

```
REDO DBU001.STB28601
INTO DBA123.STB28601_AUDITING
MODE(FIX)
PREFIX(TBCREATOR, TBNAME LIMIT 18,
LRSNHEX INTO LRSN, OPERATION);
```



Restart processing

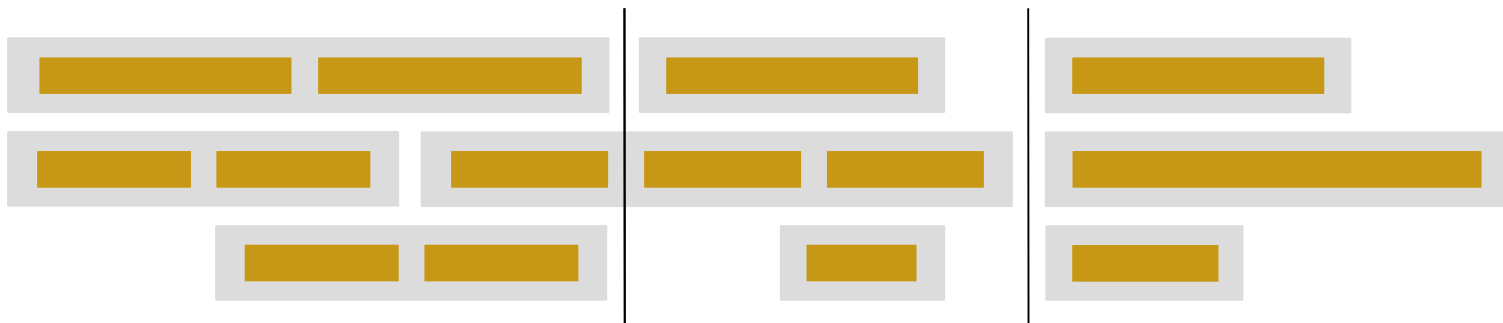


Activity Analysis

- **Quiet time Report**
Finds points of consistency without QUIESCE
- **Rollback Report**
Identifies aborted or rolled back transactions
- **Long Runners Report**
Detects heavy updaters with low commit frequency
- **Activity Reports**
By plan, user, object

Quiet times

- At Unit of Recovery scope
- At Logical Unit of Work scope



Templates

- **Derive output data set name from the table parameters**
Allows later to relate the data set to the object and execution
- **Dynamically allocated during program execution**
Reduces the number of DD statements in JCL
- **Including date and time fields**
Allows to save the execution history

Undrop

- Undrop Objects
DATABASE, TABLESPACE, TABLE, INDEX
- Examine log records for catalog tables
- Generate CREATE statements
- Restore data using
Last full image copy
Following Incremental copies
- Apply log records up to the DROP

ULT Performance

- **Extract log:**
Number of tables: 246
Observed period of time: 24 hours
Archived log dataset: 142 on DASD
Log records read: 433 millions (217 GB)
Records in minilog: 11 millions (5.5 GB)
Additional space (DCC): **380 MB**
Used CPU time: **17 min 20 sec**
- **Generate SQL:**
Depends on size of minilog
Our experience: 20–40% of MINILOG step

Advantages of ULT4DB2

- **Easy to install**
Stand-Alone-Tool
No started task
No usage of DB2 log exits
- **Easy to use**
- **Low resource consumption**
- **Restartability**
- **Dynamic allocation of output datasets**
- **Flexible output formats**

Would you like to test ULT4DB2?





Thank you
for your
attention!

Your UBS Hainer Team





Learn more about ULT4DB2 and our DB2 High-End Product Line at www.ubs-hainer.com or send an email to info@ubs-hainer.com