2555840 - Runtime error UNCAUGHT_EXCEPTION due to CX_ODQ_TIMEOUT raised by GET_SHARED_LOCK/GET_EXCLUSIVE_LOCK

Version	8	**Type**	SAP Knowledge Base Article
Language	English	**Master Language**	English
Release Status	Released to Customer	**Category**	Problem
Component	BC-BW-ODP (Operational Data Provisioning (ODP) and Delta Queue (ODQ))	**Released On**	14.01.2022

Please find the original document at **https://launchpad.support.sap.com/#/notes/2555840**

Symptom

You get following error when executing ODP DTP.

- Exclusive TSN not received because object EODQ_TSN is locked by user *. (Message No. SODQ018)

OR

A runtime error UNCAUGHT_EXCEPTION as a result of a CX_ODQ_TIMEOUT exception while executing a transaction on a system (which might generate delta data for ODP framework).

The corresponding short dump contains the following data:

```
Category ABAP Programming Error
Runtime Errors UNCAUGHT_EXCEPTION
Except. CX_ODQ_TIMEOUT
ABAP Program CL_ODQ_CORE_SERVICE==========CP
Application Component BC-BW-ODP

...
49 ENDWHILE.
50
>>>>> RAISE EXCEPTION TYPE cx_odq_timeout.
52
53 ENDMETHOD.
...
```

Environment

- Source System of BW system
- SAP R/3
- SAP R/3 Enterprise 4.7
- SAP ERP Central Component
- SAP ERP
- SAP enhancement package for SAP ERP
- SAP enhancement package for SAP ERP, version for SAP HANA
- SAP S/4HANA

Reproducing the Issue

1. In BW system
2. Run ODP DTP
3. In the request monitor screen, there is error SODQ018.

OR

1. In Source system
2. Start a process (transaction/program for example RMBWV3*, direct delta, FI related) that (also) saves data into an ODP queue
3. After some time, an UNCAUGHT_EXCEPTION error occurs

Cause

There are 2 types of locks: Exclusive and Shared.

- An exclusive lock (on TSN) is needed for a BW delta extractor or the demon cycle. System tried several times until XXX seconds reached, but not get the exclusive lock. --> Then an exception cx_odq_timeout raised
- A shared lock (on TSN) is needed for an application process posting applicatoin+ODP+delta tables at the same time ON-COMMIT in an update process (direct delta or FI). System tried several times until YYY seconds reached, but not get the shared lock. --> Then an exception cx_odq_timeout raised

In conclusion, waiting time of XXX/YYY seconds (TSN_SHARED_LOCK_WAIT or TSN_EXCLUSIVE_LOCK_WAIT) to get a shared/exclusive lock was exceeded, but not get the shared/exclusive lock ---> Dump.

Resolution

Increase the waiting time (XXX or YYY) so that system has enough time to get the lock.

For Exclusive lock:

1. Implement below SAP Note in source system to introduce the paramter and fix the known bugs:

2011814 - Increased waiting time on TSN enqueue for ODQ extraction
3021737 - Exclusive TSN with parameter TSN_EXCLUSIVE_LOCK_WAIT without exclusive lock
3030338 - CX_ODQ_TIMEOUT during get_shared lock - ODP Demon user is holding lock

2. Set parameter according to 2011814.

OBJECT = TSN_EXCLUSIVE_LOCK_WAIT
VALUE = 3600

For Shared lock:

1. Implement below SAP Note in source system to introduce the paramter and fix the known bugs:

2966901 - Increase waiting time for TSN enqueue when posting data to ODQ
2814349 - Improvement in short dump info for termination CX_ODQ_TIMEOUT in GET_SHARED_LOCK
2988461 - Error due to cleared message ID

2. Set parameter according to 2966901 .

OBJECT = TSN_SHARED_LOCK_WAIT
VALUE = <Wait_time> (e.g. 60)

If the issue persists:

You can look for a long-standing lock for ODQ_E_TSN table using transaction SM12, find the program being executed by the corresponding work process, and contact the responsible for that application to ask for a fix.

It's then either a DB-issue, or a lock server performance issue.

See Also

TSN or so called transactional sequence numbers are needed to determine the right sequence of delta data, and in some cases to guarantee uniqueness.These TSNs are used in many places in a system, during BW-requests, during saving documents which push the delta directly in the statistic queues, the ODP-demon, etc.

For **exclusive lock**, the system tries for 5s to get the lock, idles then 5s, and tries the same again. There are cycles of 10 seconds. Setting the parameter to a higher value of e.g. 3600 is OK, as there are always 5s for other processes needing a shared lock to continue.

For **shared lock**, there is no idling in between like for the exclusive lock. The system really tries every 5ms to get the lock. Per default, after 1000 tries and 5s it terminates. With the parameter, you can decide how much longer the system tries. So maybe 31s might be a starting point, which would mean there was 6-times an exclusive lock not get within 5s, which would be already quite strange. This would have then be to analyzed further why the exclusive lock is not get, or not released. It should not be set too high, as posting processes will wait for the given value time instead of 5s, which might lead under high load to a WP-shortage.

Keywords

UNCAUGHT_EXCEPTION, CX_ODQ_TIMEOUT, CL_ODQ_CORE_SERVICE, CL_ODQ_TSN, GET_SHARED_LOCK, TSN_EXCLUSIVE_LOCK_WAIT, ODQ_E_TSN, EODQ_TSN, SODQ 018,SODQ018, RMBWV3, MCEX

Products

SAP ERP Central Component all versions
SAP ERP all versions
SAP R/3 Enterprise all versions
SAP R/3 all versions
SAP S/4HANA all versions
SAP enhancement package for SAP ERP all versions
SAP enhancement package for SAP ERP, version for SAP HANA all versions

This document refers to

SAP Note/KBA	Title
2011814	Increased waiting time on TSN enqueue for ODQ extraction

