EFFICIENT METHODS AND SYSTEMS FOR CONSISTENT READ IN RECORD-BASED MULTI-VERSION CONCURRENCY CONTROL

A system and method are provided for consistent read in a record-based multi-version concurrency control (MVCC) in database (DB) management systems. A method in a record-based MVCC DB management system for a snapshot consistent read includes copying a system commit transaction identifier (TxID) and a current log record sequence number (LSN) from a transaction log at a start of a reader without backfilling of a commit LSN of a transaction to records that are changed and without copying an entire transaction table by the reader; and determining whether a record is visible according to a record TxID, the commit TxID and a current LSN, wherein a transaction table is consulted only when the record TxID is equal to or larger than a commit TxID at a transaction start.
**INTERNATIONAL SEARCH REPORT**

**INTERNATIONAL APPLICATION No.**

**PCT/CN2015/0074299**

**A. CLASSIFICATION OF SUBJECT MATTER**

G06F 17/30(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNPAT, CNKI, EPODOC, WPI: sequence, multi Iw version Iw concurrency Iw control+, MVCC, number, record, concurrency, transaction, TXID, identifier?, commit

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>A</td>
<td>US 2012084274 A1 (RENKES, FRANK ET AL.) 05 April 2012 (2012-04-05) description, paragraphs [0003]-[0007], and figures 1-3</td>
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<td>CN 102750376 A (TIANJIN SHENZHOU GENERAL DATA TECHNOLOGY CO., LTD.) 24 October 2012 (2012-10-24) the whole document</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

19 May 2015

Date of mailing of the international search report

29 June 2015

Name and mailing address of the ISA/CN

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