

Title (en)

A METHOD FOR PRECISE TRAP HANDLING IN CASE OF SPECULATIVE AND OUT-OF-ORDER LOADS

Title (de)

VERFAHREN ZUR PRÄZISEN TRAP-BEHANDLUNG BEI SPEKULATIVEN UND UNGEORDNETEN LADEBEFEHLEN

Title (fr)

PROCEDE DE ROUTINE DE DEROUTEMENT PRECISE EN CAS DE CHARGES SPECULATIVES ET DEFECTUEUSES

Publication

EP 1221087 A1 20020710 (EN)

Application

EP 00965521 A 20000929

Priority

- US 0026815 W 20000929
- US 41182499 A 19991001

Abstract (en)

[origin: WO0125903A1] A processor performs precise trap handling for out-of-order and speculative load instructions. It keeps track of the age of load instructions in a shared scheme that includes a load buffer and a load annex. All precise exceptions are detected in a T phase of a load pipeline. Data and control information concerning load operations that hit in the cache are staged in a load annex during the A1, A2, A3, and T pipeline stages until all exceptions in the same, or earlier, instruction packet are detected. Data and control information from all other load instructions is staged in the load annex after the load data is retrieved. If an exception occurs, any load in the same instruction packet as the instruction causing the exception is canceled. Any load instructions that are "younger" than the instruction that caused the exception are also canceled. The age of load instructions is determined by tracking the pipe stages of the instruction. When a trap occurs, any load instruction with a non-zero age indicator is canceled.

IPC 1-7

G06F 9/38

IPC 8 full level

G06F 9/38 (2006.01)

CPC (source: EP)

G06F 9/3836 (2013.01); **G06F 9/3838** (2013.01); **G06F 9/3856** (2023.08); **G06F 9/3858** (2023.08); **G06F 9/3861** (2013.01); **G06F 9/3867** (2013.01)

Designated contracting state (EPC)

AT BE CH DE FR GB LI

DOCDB simple family (publication)

WO 0125903 A1 20010412; AU 7622400 A 20010510; EP 1221087 A1 20020710; JP 2003511754 A 20030325

DOCDB simple family (application)

US 0026815 W 20000929; AU 7622400 A 20000929; EP 00965521 A 20000929; JP 2001528796 A 20000929