CLAIMS

1. A method of facilitating processing of transactions within a computing environment, said method comprising:

obtaining a transaction begin instruction, the transaction begin instruction comprising an opcode that specifies a transaction begin instruction of a particular type, and a field that specifies a general register save mask to explicitly specify a set of individually selected registers corresponding to be saved based on executing the transaction begin instruction, the transaction begin instruction to initiate a transaction, and the general register save mask explicitly specifying the set of individually selected registers to be saved at a start of the transaction, wherein the general register save mask comprises a plurality of bits, and each bit of the plurality of bits represents an even-odd pair of registers, the transaction effectively delaying committing transactional stores to main memory until completion of a selected transaction; and

executing the transaction begin instruction, the executing the transaction begin instruction comprising saving contents of the set of individually selected registers explicitly specified in the general register save mask of the transaction begin instruction, and initiating execution of the transaction.

2. The method of claim 1, further determining that the transaction has aborted; and based on determining the transaction has aborted and that one or more selected registers are specified by the general register save mask, restoring the one or more selected registers.

3. The method of claim 2, wherein the saving comprises copying contents of the one or more selected registers to a designated memory location, and wherein the restoring comprises copying the contents from the designated memory location to the one or more selected registers.

4. The method of claim 1, wherein the instruction is an outermost nested transaction begin instruction of a nested transaction, and wherein the method further comprises aborting a transaction of the nested transaction, and based on the aborting and one or more selected registers being specified by the general register save mask, restoring the one or more selected registers to the contents saved based on execution of the outermost nested transaction begin instruction.

5. The method of claim 1, wherein the instruction comprises a transaction begin instruction or a transaction begin constrained instruction.

6. The method of claim 1, wherein the set of individually selected registers comprise at least one of: one or more general registers, one or more floating point registers, or one or more access registers.

7. A system comprising means adapted for carrying out all the steps of the method according to any preceding method claim.

8. A computer program comprising instructions for carrying out all the steps of the method according to any preceding method claim, when said computer program is executed on a computer system.

CLAIMS

1. A method for facilitating processing of transactions within a computing environment, said method comprising steps of:

determining, by a processor, from information provided by an instruction one or more selected registers to be saved in transactional processing, the instruction to begin execution of a transaction, the transaction effectively delaying committing transactional stores to main memory until completion of a selected transaction, and the one or more selected registers being less than all of the registers used by the transaction in execution of the transaction; and

saving contents of the one or more selected registers, based on execution of the instruction.

2. The method of claim 1, wherein the method further comprises:

determining that the transaction has aborted; and

based on determining the transaction has aborted, restoring the one or more selected registers.

3. The method of claim 2, wherein the saving comprises copying contents of the one or more selected registers to a designated memory location, and wherein the restoring comprises copying the contents from the designated memory location to the one or more selected registers.

4. The method of claim 1, wherein the one or more selected registers are specified in a general register save mask of the instruction.

5. The method of claim 4, wherein the general register save mask comprises a plurality of bits, and each bit of the plurality of bits represents a pair of general registers to be saved.

6. The method of claim 4, wherein the instruction is an outermost nested transaction begin instruction of a nested transaction, and wherein the method further comprises aborting a transaction of the nested transaction, and based on the aborting, restoring the one or more selected registers to the contents saved based on execution of the outermost nested transaction begin instruction.

7. The method of claim 1, wherein the instruction comprises a transaction begin instruction or a transaction begin constrained instruction.

8. The method of claim 1, wherein the one or more selected registers comprise at least one of: one or more general registers, one or more floating point registers, or one or more access registers.

9. A system comprising means adapted for carrying out all the steps of the method according to any preceding method claim.

10. A computer program comprising instructions for carrying out all the steps of the method according to any preceding method claim, when said computer program is executed on a computer system.

AMENDED CLAIMS
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1. A method for facilitating processing of transactions within a computing environment, said method comprising steps of:

obtaining a transaction begin instruction, the transaction begin instruction comprising an opcode that specifies a transaction begin instruction of a particular type, and a field that specifies a general register save mask (210) which has a plurality of bits, each of which represents a pair of general registers, and when the bit has one value the corresponding register pair is saved and when the bit has the other value the corresponding register pair is not saved, the transaction begin instruction to initiate a transaction, and the general register save mask thereby explicitly specifying the one or more selected registers of the set of general registers to be saved at a start of the transaction, the transaction effectively delaying committing transactional stores to main memory until completion of a selected transaction; and

executing the transaction begin instruction, the executing the transaction begin instruction comprising saving contents of the one or more selected registers of the set of general registers explicitly specified in the general register save mask of the transaction begin instruction, wherein the saving only saves contents of the one or more selected registers of the set of general registers explicitly specified in the general register save mask, and initiating execution of the transaction.

2. The method of claim 1, wherein the method further comprises:

determining that the transaction has aborted; and

based on determining the transaction has aborted, restoring the one or more selected registers.

3. The method of claim 2, wherein the saving comprises copying contents of the one or more selected registers to a designated memory location, and wherein the restoring comprises copying the contents from the designated memory location to the one or more selected registers.

4. The method of claim 1, wherein the instruction is an outermost nested transaction begin instruction of a nested transaction, and wherein the method further comprises aborting a transaction of the nested transaction, and based on the aborting, restoring the one or more selected registers to the contents saved based on execution of the outermost nested transaction begin instruction.

5. A system comprising means adapted for carrying out all the steps of the method according to any preceding method claim.

6. A computer program comprising instructions for carrying out all the steps of the method according to any preceding method claim, when said computer program is executed on a computer system.