

WHAT IS CLAIMED IS:

1. A method of updating a first computer memory of a first transaction engine (30) configured to process transactions of a first topic and a second computer memory of a second transaction engine configured to process transactions of a second topic different from the first topic, the method comprising:

receiving a limit amount tradable by the first transaction and the second transaction;

receiving, by an order processor (34) of the first transaction engine (30), a first transaction request of the first topic, and in response to the receiving by the first transaction engine (30) of the first transaction request, the first transaction engine (30) executing a first transaction process including processing the first transaction request to yield a completed first transaction and, based on the completed first transaction, updating a first computer memory, according to a first shared computer memory map of the first computer memory,

wherein the updating according to the completed first transaction includes updating an available amount tradable in accordance with the received limit amount tradable;

receiving the first transaction request by a second memory slave controller (60), the second memory slave controller (60) executing, in response to the receiving of the first transaction request, a memory process on a second computer memory, comprising:

waiting for receipt of confirmation of the completed first transaction from the order processor (34) of the first transaction engine (30), and

updating, according to the completed first transaction, the second computer memory, according to a second shared computer memory map of the second computer memory,

wherein the updating by the second memory slave controller (60) according to the completed first transaction includes updating the available amount tradable in accordance with the received limit amount tradable,

wherein the second computer memory is shared by the second transaction engine and by the second memory slave controller (60), and is shared by no remaining transaction engine and by no remaining memory slave controller;

receiving, by an order processor (34) of the second transaction engine, a second transaction request of the second topic, and in response to the receiving of the second transaction request, the second transaction engine executing a second transaction process, including processing the second transaction request to yield a completed second order and, based on the completed second transaction, updating, by the order processor (34) of the second transaction engine, the second computer memory, according to the second shared computer memory map of the second computer memory,

wherein the updating by the second transaction engine according to the completed second transaction comprises updating the available amount tradable in accordance with the received limit amount tradable and with the first updating;

receiving the first transaction request by a first memory slave controller (40), the memory slave controller (40), in response to the receiving of the second transaction request, executing a memory process on a first computer memory, comprising:

waiting, by the first memory slave controller (40), for receipt of confirmation of the completed second transaction received from the order processor (34) of the second transaction engine, and updating, , according to the completed second transaction, the first computer memory, according to the first shared computer memory map of the first computer memory,

wherein the updating by the first memory slave controller (40) according to the completed second transaction comprises updating the available amount tradable in accordance with the limit amount tradable, and with the first updating,

wherein the first computer memory is shared by the first transaction engine (30) and by the first memory slave controller (40) and is shared by no remaining transaction engine and by no remaining memory slave controller;

wherein the first memory slave controller (40) receives no direct notification of the first transaction from the first transaction engine (30), and the second memory slave controller (60) receives no direct notification of the second transaction from the second transaction engine;

updating, by a memory master, a master memory according to the confirmation of the completed first transaction received from the first transaction engine (30) and the confirmation of the completed second transaction received from the second transaction engine.

2. The method of claim 1, wherein the first transaction engine (30) is implemented on a first automated data processor, and the second transaction engine is implemented on a second automated data processor different from the first automated data processor.

Claim 3 (Canceled).

4. The method of claim 1, further comprising, prior to performing other recited steps:

generating, by a configuration manager (21) of the first transaction engine (30), the first shared computer memory map of the first computer memory;

generating, by a configuration manager of the second transaction engine, the second shared computer memory map of the second computer memory.

5. The method of claim 1, further comprising, prior to performing other recited steps:

generating, by the first memory slave controller (40), the first shared computer memory map of the first computer memory;

generating, by the second memory slave controller (60), the second shared computer memory map of the second computer memory.

6. The method of claim 1, wherein the confirmation of the completed first transaction comprises an order ID associated with the first transaction request and trade data associated with the confirmation of the completed first transaction.

7. The method of claim 1, further comprising:
based on the completed first transaction, transmitting, by the first transaction engine (30), an execution report, to a plurality of memory slave controllers.

8. The method of claim 1, further comprising:
receiving, by a gateway processor (20), the first transaction request and the second transaction request;
first identifying the first transaction request as being associated with the first topic;
according to the identifying, transmitting the first transaction request to the order processor (34) of the first transaction engine (30);
wherein the receiving of the first transaction request by the second memory slave controller (60) is based on a transmission of the first transaction request to a plurality of memory slave controllers including the second memory slave controller (60);
identifying the second transaction request as being associated with the second topic;
according to the second identifying, transmitting the second transaction request to the order processor (34) of the second transaction processor; and
wherein the receiving of the second transaction request by the first memory slave controller (40) is based on a transmission of the second transaction request to the plurality of memory slave controllers including the first memory slave controller (40).

9. The method of claim 8, further comprising:
transmitting the second transaction request to the memory master processor,
wherein the first transaction engine (30) is implemented on a first automated data processor, the second transaction engine is implemented on a second automated data processor different from the first automated data processor, and the memory master processor is implemented on a third automated data processor different from the first automated data processor.

Claim 10 (Canceled).

11. A system configured to update a first computer memory of a first transaction engine (30) configured to process transactions of a first topic and to update a second computer memory of a second transaction engine configured to

process transactions of a second topic different from the first topic, the system comprising:

- the first transaction engine (30) implemented on a first automated data processor and comprising:

- an order processor (34) configured to receive a first transaction request of the first topic, and to process the first transaction request to yield a completed first transaction;

- a shared memory controller configured to update, based on the completed first transaction, the first computer memory, according to a first shared computer memory map of the first computer memory,

- wherein the update by the first transaction engine (30) includes a first updating of an available amount tradable in accordance with a received amount limiting the tradable amount; and

- an execution report generator configured to transmit, based on the completed first transaction, an execution report, to a plurality of memory slave controllers including a second memory slave controller (60);

- the second memory slave controller (60) comprising:

- an order receiver configured to receive the first transaction request;

- a transaction engine interface configured to wait for receipt of confirmation of the completed first transaction from the order processor (34) of the first transaction engine (30); and

- a shared memory manager configured to update, according to the completed first transaction, the second computer memory, according to a second shared computer memory map of the second computer memory,

- wherein the update by the second memory slave controller (60) includes updating the available amount tradable in accordance with the received amount limiting the tradable amount;

- the second transaction engine implemented on a second automated data processor different from the first automated data processor and comprising:

- an order processor (34) configured to receive a second transaction request of the second topic, and to process the second transaction request to yield a completed second transaction; and

a shared memory controller configured to update, based on the completed second transaction, the second computer memory, according to the second shared computer memory map of the second computer memory,

wherein the update by the second transaction engine comprises updating the available amount tradable in accordance with the received amount limiting the tradable amount and with the first updating; and

the system further comprising:

a first memory slave controller (40) configured to execute a memory process on the first computer memory in response to receipt of the second transaction request, the first memory slave controller (40) comprising:

a transaction engine interface configured to wait for receipt of confirmation of the completed second transaction received from the the second transaction engine; and

a shared memory manager configured to update, according to the completed second transaction, the first computer memory, according to the first shared computer memory map of the first computer memory,

wherein the update by the first memory slave controller (40) comprises updating the available amount tradable in accordance with the received amount limiting the tradable amount and with the first updating, and

wherein the first computer memory is shared by the first transaction engine (30) and by the first memory slave controller (40) and is shared by no remaining transaction engine and by no remaining memory slave controller, and the second computer memory is shared by the second transaction engine and by the second memory slave controller (60) and is shared by no remaining transaction engine and by no remaining slave controller, and

wherein the first memory slave controller (40) receives no direct notification of the first transaction from the first transaction engine (30), and the second memory slave controller (60) receives no direct notification of the second transaction from the second transaction engine.

12. The system of claim 11, wherein the memory slave controller (40) of the first transaction engine (30) provides no direct notification to the order processor (34) of the first transaction engine (30) regarding the update to the first computer memory, and

the memory slave controller (60) of the second transaction engine provides no direct notification to the order processor (34) of the second transaction engine regarding the update to the second computer memory

13. The system of claim 11, wherein
the first transaction engine (30) further comprises:
a configuration manager configured to generate, prior to receiving a transaction request by the first transaction engine (30), the first shared computer memory map of the first computer memory; and

the second transaction engine further comprises:
a configuration manager configured to generate, prior to receiving a transaction request by the second transaction engine, the second shared computer memory map of the second computer memory.

14. The system of claim 11, wherein
the memory slave controller (40) of the first transaction engine (30) further comprises a shared memory creator configured to generate, prior to receiving a transaction request, the first shared computer memory map of the first computer memory; and

the memory slave controller (60) of the second transaction engine further comprises a shared memory creator configured to generate, prior to receiving a transaction request, the second shared computer memory map of the second computer memory.

15. The system of claim 11, wherein the confirmation of the completed first transaction comprises an order ID associated with the first transaction request and trade data associated with the confirmation of the completed first transaction.

16. The system of claim 11, wherein the first and second transaction requests are orders, and the processing of the first transaction request and the processing of the second transaction request each entail matching the requests in respective order books for an electronic exchange for market-traded items.

17. The system of claim 11, the second transaction engine further comprising:

an execution report generator configured to transmit, based on the completed second transaction, an execution report, to a plurality of memory slave controllers including the memory slave controller (40) of the first transaction engine (30).

18. The system of claim 11, further comprising a gateway processor comprising:

an order validator configured to receive the first and second transaction requests;

a transaction topic processor configured to identify the first transaction request as being associated with the first topic and the second transaction request as being associated with the second topic;

a transaction engine interface configured to transmit, according to the identifying, the first transaction request to the first transaction processor and the second transaction request to the second transaction processor;

a slave and master broadcaster configured to transmit the first transaction request to a plurality of memory slave controllers including the memory slave controller (60) of the second transaction engine; and

the slave and master broadcaster configured transmit the second transaction request to the plurality of memory slave controllers including the memory slave controller (40) of the first transaction engine (30).

19. The system of claim 18, further comprising:

the memory master processor configured to receive the first transaction request and the second transaction request;

a transaction engine interface configured to receive the confirmation of the completed first transaction and the confirmation of the second transaction; and

a controller configured to perform the updating of the master memory according to the confirmation of the completed first transaction and the confirmation of the completed second transaction,

wherein the memory master processor is implemented on a third automated data processor different from the first and second automated data processors.