CLAIMS

1. A computer program product for facilitating processing within a computing environment, the computer program product comprising:

a computer readable storage medium readable by a processing unit and storing instructions for execution by the processing unit for performing a method comprising:

determining whether an access control field of an instruction includes a hold value, the hold value being a hold designation for a storage operand request of a subsequent instruction to a storage location shared by multiple processing units of a computing environment;

controlling, at least in part, processing of the subsequent instruction dependent on whether the access control field of the instruction includes the hold value, the controlling comprising:

ascertaining whether a state of a corresponding cache line in private cache used for processing the storage operand request is owned exclusively by the processing unit; and

based on determining that the storage operand request is designated hold, and that the state of the corresponding cache line in private cache used for processing the storage operand request is owned exclusively, continuing to hold the corresponding cache line in private cache exclusively after completing processing of the storage operand request, the continuing to hold including initiating a counter to facilitate the continuing hold for a desired interval.

2. The computer program product of claim 1, wherein the initiating comprises initiating a set interval for continued holding of the corresponding cache line in private cache exclusively after completing processing of the storage operand request, and discontinuing the holding of the corresponding cache line in private cache exclusively after the counter reaches the set interval.

3. The computer program product of claim 2, wherein a length of the set interval is dependent on an access type of the storage operand request, the access type being from a group consisting of fetch-type, store-type and update-type.

4. The computer program product of claim 3, wherein the length of the set count interval is greater for the store-type and the update-type than for the fetch-type.

5. The computer program product of claim 2, wherein the set interval is from a group consisting of a time-based interval and a cycle-based interval.

6. The computer program product of claim 2, further comprising determining an access type of the storage operand request, and based on determining that the access type is a fetch-type access, discontinuing the holding of the corresponding cache line in private cache exclusively based on the counter reaching the set interval.

7. The computer program product of claim 1, further comprising determining an access type of the storage operand request, and based on the access type being a store-type or update-type, determining whether a subsequent storage operand request is designated release for the corresponding cache line, and based on the subsequent storage operand request being designated release, discontinuing the holding of the corresponding cache line in private cache exclusively.

8. The computer program product of claim 7, wherein the initiating comprises initiating a set interval for continued holding of the corresponding cache line in private cache exclusively after completing processing of the storage operand request, and discontinuing the holding of the corresponding cache line exclusively upon occurrence of the earlier of the counter reaching the set interval or receiving the subsequent storage operand request designated release for the corresponding cache line.

9. The computer program product of claim 1, wherein cache invalidate commands for the corresponding cache line in private cache are rejected during the continuing to hold the corresponding cache line in private cache exclusively after completing processing of the storage operand request.

10. A computer system for facilitating processing within a computing environment, the computer system comprising:

a memory; and

a processor communicatively coupled with the memory, wherein the computer system is configured to perform a method comprising:

determining whether an access control field of an instruction includes a hold value, the hold value being a hold designation for a storage operand request of a subsequent instruction to a storage location shared by multiple processing units of a computing environment;

controlling, at least in part, processing of the subsequent instruction by a processing unit dependent on whether the access control field of the instruction includes the hold value, the controlling comprising:

ascertaining whether a state of a corresponding cache line in private cache used for processing the storage operand request is owned exclusively by the processing unit; and

based on determining that the storage operand request is designated hold, and that the state of the corresponding cache line in private cache used for processing the storage operand request is owned exclusively, continuing to hold the corresponding cache line in private cache exclusively after completing processing of the storage operand request, the continuing to hold including initiating a counter to facilitate the continuing hold for a desired interval.

11. The computer system of claim 10, wherein the initiating comprises initiating a set interval for continued holding of the corresponding cache line in private cache exclusively after completing processing of the storage operand request, and discontinuing the holding of the corresponding cache line in private cache exclusively after the counter reaches the set interval.

12. The computer system of claim 11, wherein a length of the set interval is dependent on an access type of the storage operand request, the access type being from a group consisting of fetch-type, store-type and update-type.

13. The computer system of claim 12, wherein the length of the set interval is greater for the store-type and the update-type than for the fetch-type.

14. The computer system of claim 11, wherein the set interval is from a group consisting of a time-based interval and a cycle-based interval.

15. The computer system of claim 11, further comprising determining an access type of the storage operand request, and based on determining that the access type is a fetch-type access, discontinuing the holding of the corresponding cache line in private cache exclusively based on the counter reaching the set interval.

16. The computer system of claim 10, further comprising determining an access type of the storage operand request, and based on the access type being a store-type or update-type, determining whether a subsequent storage operand request is designated release for the corresponding cache line, and based on the subsequent storage operand request being designated release, discontinuing the holding of the corresponding cache line in private cache exclusively.

17. The computer system of claim 16, wherein the initiating comprises initiating a set interval for continued holding of the corresponding cache line in private cache after exclusively completing processing of the storage operand request, and discontinuing the holding of the corresponding cache line exclusively upon occurrence of the earlier of the counter reaching the set interval or receiving the subsequent storage operand request designated release for the corresponding cache line.

18. The computer system of claim 10, wherein cache invalidate commands for the corresponding cache line in private cache are rejected during the continuing to hold the corresponding cache line in private cache exclusively after completing processing of the storage operand request.

19. A computer-implemented method of facilitating processing within a computing environment, the computer-implemented method comprising:

determining by a processor whether an access control field of an instruction includes a hold value, the hold value being a hold designation for a storage operand request of a subsequent instruction to a storage location shared by multiple processing units of a computing environment;

controlling, at least in part, processing of the subsequent instruction by a processing unit dependent on whether the access control field of the instruction includes the hold value, the controlling comprising:

ascertaining whether a state of a corresponding cache line in private cache used for processing the storage operand request is owned exclusively by the processing unit; and

based on determining that the storage operand request is designated hold, and that the state of the corresponding cache line in private cache used for processing the storage operand request is owned exclusively, continuing to hold the corresponding cache line in private cache exclusively after completing processing of the storage operand request, the continuing to hold including initiating a counter to facilitate the continuing hold for a desired interval.

20. The computer-implemented method of claim 19, wherein the initiating comprises initiating a set interval for continued holding of the corresponding cache line in private cache exclusively after completing processing of the storage operand request, and discontinuing the holding of the corresponding cache line in private cache exclusively after the counter reaches the set interval.

21. The computer-implemented method of claim 20, wherein a length of the set interval is dependent on an access type of the storage operand request, the access type being from a group consisting of fetch-type, store-type and update-type.

22. The computer-implemented method of claim 21, wherein the length of the set interval is greater for the store-type and the update-type than for the fetch-type.

23. The computer-implemented method of claim 20, further comprising determining an access type of the storage operand request, and based on determining that the access type is a fetch-type access, discontinuing the holding of the corresponding cache line in private cache exclusively based on the counter reaching the set interval.

24. The computer-implemented method of claim 19, further comprising determining an access type of the storage operand request, and based on the access type being a store-type or update-type, determining whether a subsequent storage operand request is designated release

for the corresponding cache line, and based on the subsequent storage operand request being designated release, discontinuing the holding of the corresponding cache line in private cache exclusively.

25. The computer-implemented method of claim 24, wherein the initiating comprises initiating a set interval for continued holding of the corresponding cache line in private cache exclusively after completing processing of the storage operand request, and discontinuing the holding of the corresponding cache line exclusively upon occurrence of the earlier of the counter reaching the set interval or receiving the subsequent storage operand request designated release for the corresponding cache line.