CLAIMS

1. A computer program product for facilitating processing within a computing environment (100), the computer program product comprising:

a computer readable storage medium (14, 104, 202) readable by a processing circuit (102, 204) and storing instructions (300) for performing a method comprising:

obtaining an instruction (300) to perform one or more operations using an input value, the instruction (300) being a single architected instruction (300), and the instruction (300) comprising a negative zero control indicator (544) indicating whether negative zero control is enabled for execution of the instruction (300), wherein enabling or disabling of the negative zero control results in control of a sign of an output zero value; and

executing the instruction (300), the executing comprising:

performing the one or more operations using the input value to obtain a result comprising a sign;

determining whether to control the sign of the result, the determining being based at least in part on the negative zero control indicator (544) being set to a defined value; and

performing further processing, as part the executing the instruction (300), based on the determining, wherein the further processing forces a positive sign on the zero value, or allows the zero result to be output with a negative sign.

2. The computer program product of claim 1, wherein the negative zero control indicator (544) being set to the defined value indicates that the negative zero control is enabled for execution of the instruction, wherein the result of the performing the one or more operations is a numerical value zero having the sign, wherein the determining determines, based on the negative zero control being enabled for execution of the instruction, not to control the sign of the numerical value zero, and wherein the further processing comprises producing an output of execution of the instruction, the output comprising the numerical value zero having the sign.

3. The computer program product of claim 1, wherein the negative zero control indicator (544) being set to another value, different from the defined value, indicates that the negative zero control is not enabled for execution of the instruction, wherein the result of the performing the

one or more operations is a numerical value zero having the sign, wherein the determining determines, based on the negative zero control not being enabled, to force the sign of the numerical value zero to be positive, and wherein the further processing comprises producing an output of execution of the instruction, the producing comprising forcing the sign of the numerical value zero to be positive, wherein the output comprises the numerical value zero having the forced positive sign.

4. The computer program product of claim 3, wherein the performing the one or more operations comprises setting the sign of the result to be negative, and wherein the forcing inverts the sign of the result to be positive.

5. The computer program product of claim 3, wherein the performing the one or more operations comprises setting the sign of the result to be positive, and wherein the forcing makes no change to the positive sign and outputs the result with the positive sign.

6. The computer program product of claim 1, wherein the executing further comprises determining whether the result has a zero magnitude, wherein the determining whether to control the sign of the result and the performing further processing are performed based on determining that the result has a zero magnitude.

7. The computer program product of claim 1, wherein the determining whether to control the sign of the result is further based on a selected mode for execution of the instruction (300).

8. The computer program product of claim 7, wherein the selected mode comprises a selected sign operation of the instruction (300), the selected sign operation being selected by a field (304,508) of the instruction (300).

9. The computer program product of claim 1, wherein the input value is a binary coded decimal number, and wherein an output of the further processing and the executing is a negative zero value in binary coded decimal format.

10. The computer program product of claim 1, wherein the negative zero control indicator (544) is located in a field (304, 508) of the instruction (300).

11. A computer system for facilitating processing within a computing environment (100), the computer system comprising:

a memory (14, 104, 202); and

a processor (12, 102, 204) coupled to the memory (14, 104, 202), wherein the computer system is configured to perform a method comprising:

obtaining an instruction (300) to perform one or more operations using an input value, the instruction (300) being a single architected instruction (300), and the instruction (300) comprising a negative zero control indicator (544) indicating whether negative zero control is enabled for execution of the instruction (300), wherein enabling or disabling of the negative zero control results in control of a sign of an output zero value; and

executing the instruction (300), the executing comprising:

performing the one or more operations using the input value to obtain a result comprising a sign;

determining whether to control the sign of the result, the determining being based at least in part on the negative zero control indicator (544) being set to a defined value; and

performing further processing, as part the executing the instruction (300), based on the determining, wherein the further processing forces a positive sign on the zero value, or allows the zero result to be output with a negative sign.

12. The computer system of claim 11, wherein the negative zero control indicator (544) being set to the defined value indicates that the negative zero control is enabled for execution of the instruction, wherein the result of the performing the one or more operations is a numerical value zero having the sign, wherein the determining determines, based on the negative zero control being enabled for execution of the instruction, not to control the sign of the numerical value zero, and wherein the further processing comprises producing an output of execution of the instruction, the output comprising the numerical value zero having the sign.

13. The computer system of claim 11, wherein the negative zero control indicator (544) being set to another value, different from the defined value, indicates that the negative zero control is not enabled for execution of the instruction, wherein the result of the performing the one or more operations is a numerical value zero having the sign, wherein the determining determines,

based on the negative zero control not being enabled, to force the sign of the numerical value zero to be positive, and wherein the further processing comprises producing an output of execution of the instruction, the producing comprising forcing the sign of the numerical value zero to be positive, wherein the output comprises the numerical value zero having the forced positive sign.

14. The computer system of claim 11, wherein the executing further comprises determining whether the result has a zero magnitude, wherein the determining whether to control the sign of the result and the performing further processing are performed based on determining that the result has a zero magnitude.

15. The computer system of claim 11, wherein the determining whether to control the sign of the result is further based on a selected mode for execution of the instruction (300), the selected mode comprising a selected sign operation of the instruction (300), the selected sign operation being selected by a field (304, 508) of the instruction (300).

16. The computer system of claim 11, wherein the input value is a binary coded decimal number, and wherein an output of the further processing and the executing is a negative zero value in binary coded decimal format.

17. A computer-implemented method of facilitating processing within a computing environment (100), the computer-implemented method comprising:

obtaining an instruction (300) to perform one or more operations using an input value, the instruction (300) being a single architected instruction (300), and the instruction (300) comprising a negative zero control indicator (544) indicating whether negative zero control is enabled for execution of the instruction (300), wherein enabling or disabling of the negative zero control results in control of a sign of an output zero value; and

executing the instruction (300), the executing comprising:

performing the one or more operations using the input value to obtain a result comprising a sign;

determining whether to control the sign of the result, the determining being based at least in part on the negative zero control indicator (544) being set to a defined value; and

performing further processing, as part the executing the instruction (300), based on the determining, wherein the further processing forces a positive sign on the zero value, or allows the zero result to be output with a negative sign.

18. The method of claim 17, wherein the negative zero control indicator (544) being set to the defined value indicates that the negative zero control is enabled for execution of the instruction, wherein the result of the performing the one or more operations is a numerical value zero having the sign, wherein the determining determines, based on the negative zero control being enabled for execution of the instruction, not to control the sign of the numerical value zero, and wherein the further processing comprises producing an output of execution of the instruction, the output comprising the numerical value zero having the sign.

19. The method of claim 17, wherein the negative zero control indicator (544) being set to another value, different from the defined value, indicates that the negative zero control is not enabled for execution of the instruction, wherein the result of the performing the one or more operations is a numerical value zero having the sign, wherein the determining determines, based on the negative zero control not being enabled, to force the sign of the numerical value zero to be positive, and wherein the further processing comprises producing an output of execution of the instruction, the producing comprising forcing the sign of the numerical value zero to be positive, wherein the output comprises the numerical value zero having the forced positive sign.

20. The method of claim 17, wherein the determining whether to control the sign of the result is further based on a selected mode for execution of the instruction (300), the selected mode comprising a selected sign operation of the instruction (300), the selected sign operation being selected by a field (304, 508) of the instruction (300), wherein the input value is a binary coded decimal number, and wherein an output of the further processing and the executing is a negative zero value in binary coded decimal format.