CLAIMS

1. A computer program product for executing a machine instruction in a central processing unit, the computer program product comprising:

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

obtaining, by a processor, a machine instruction for execution, the machine instruction being defined for computer execution according to a computer architecture, the machine instruction comprising:

at least one opcode field to provide an opcode, the opcode identifying a convert from zoned to decimal floating point function;

a first register field designating a first operand location;

a second register field and a displacement field, wherein contents of a second register designated by the second register field are combined with contents of the displacement field to form an address of a second operand; and

a sign control used to indicate whether the second operand has a sign field; and

executing the machine instruction, the executing comprising:

converting the second operand in a zoned format to a decimal floating point format; and

placing a result of the converting in the first operand location.

2. The computer program product of claim 1, wherein the opcode, when a first value, indicates a zoned source and a long decimal floating point result.

3. The computer program product of claim 1, wherein the opcode, when a second value, indicates a zoned source and an extended decimal floating point result.

4. The computer program product of claim 1, wherein the sign control is specified in a mask field of the machine instruction.

5. The computer program product of claim 1, wherein the machine instruction further includes a length field specifying a length of the second operand.

6. The method of claim 1, wherein the executing further comprises reading the second operand from memory, and performing the converting on the second operand read from memory.

7. The computer program product of claim 1, wherein the executing further comprises determining a sign for the result, and wherein the placing comprises including the determined sign with the result in the first operand location.

8. The computer program product of claim 7, wherein the determining is based on the sign control.

9. The computer program product of claim 8, wherein based on the sign control being a first value, the determining comprises:

reading a sign field from memory, the sign field being included in the second operand; and

setting the sign from the sign field.

10. The computer program product of claim 8, wherein based on the sign control being a second value, the determining comprising forcing a positive sign for the result.

11. A computer system for executing a machine instruction in a central processing unit, the computer system comprising:

a memory; and

a processor in communications with the memory, wherein the computer system is configured to perform a method, said method comprising:

obtaining a machine instruction for execution, the machine instruction being defined for computer execution according to a computer architecture, the machine instruction comprising:

at least one opcode field to provide an opcode, the opcode identifying a convert from zoned to decimal floating point function;

a first register field designating a first operand location;

a second register field and a displacement field, wherein contents of a second register designated by the second register field are combined with contents of the displacement field to form an address of a second operand; and

a sign control used to indicate whether the second operand has a sign field; and

executing the machine instruction, the executing comprising:

converting the second operand in a zoned format to a decimal floating point format; and

placing a result of the converting in the first operand location.

12. The computer system of claim 11, wherein the opcode, when a first value, indicates a zoned source and a long decimal floating point result, and when a second value, indicates a zoned source and an extended decimal floating point result.

13. The computer system of claim 11, wherein the machine instruction further includes a length field specifying a length of the second operand.

14. The computer system of claim 11, wherein the executing further comprises reading the second operand from memory, and performing the converting on the second operand read from memory.

15. The computer system of claim 11, wherein the executing further comprises determining a sign for the result, and wherein the placing comprises including the determined sign with the result in the first operand location.

16. The computer system of claim 15, wherein the determining is based on the sign control, and wherein based on the sign control being a first value, the determining comprises:

reading a sign field from memory, the sign field being included in the second operand; and

setting the sign from the sign field.

17. The computer system of claim 15, wherein the determining is based on the sign control, and wherein based on the sign control being a second value, the determining comprising forcing a positive sign for the result.

18. A method for executing a machine instruction in a central processing unit, the method comprising:

obtaining, by a processor, a machine instruction for execution, the machine instruction being defined for computer execution according to a computer architecture, the machine instruction comprising:

at least one opcode field to provide an opcode, the opcode identifying a convert from zoned to decimal floating point function;

a first register field designating a first operand location;

a second register field and a displacement field, wherein contents of a second register designated by the second register field are combined with contents of the displacement field to form an address of a second operand; and

a sign control used to indicate whether the second operand has a sign field; and

executing the machine instruction, the executing comprising:

converting the second operand in a zoned format to a decimal floating point format; and

placing a result of the converting in the first operand location.

19. The method of claim 18, wherein the executing further comprises determining a sign for the result, and wherein the placing comprises including the determined sign with the result in the first operand location.

20. The method of claim 19, wherein the determining is based on the sign control, and wherein:

based on the sign control being a first value, the determining comprises reading a sign field from memory, the sign field being included in the second operand, and setting the sign from the sign field; and

based on the sign control being a second value, the determining comprises forcing a positive sign for the result.

CLAIMS

1. A computer program product for executing a machine instruction in a central processing unit, the computer program product comprising: a computer readable storage medium readable by a processing circuit and storing instructions for execution by the processing circuit for performing a method comprising: obtaining, by a processor, a machine instruction for execution, the machine instruction being defined for computer execution according to a computer architecture, the machine instruction comprising: at least one opcode field to provide an opcode, the opcode identifying a convert from zoned to decimal floating point function; a first register field designating a first operand location; a second register field and a displacement field, wherein contents of a second register designated by the second register field are combined with contents of the displacement field to form an address of a second operand; and a sign control used to indicate whether the second operand has a sign field; and executing the machine instruction, the executing comprising: converting the second operand in a zoned format to a decimal floating point format, wherein the converting comprises: converting one or more triplets of zoned digits in the second operand to a corresponding one or more densely packed decimal groups, the corresponding one or more densely packed decimal groups provided as a first portion of a result; and converting a remaining zoned digit in the second operand to a corresponding bit sequence, the corresponding bit sequence being provided as a second portion of the result; and placing the result in the first operand location, wherein the result is stored to the location in the decimal floating point format absent issuing one or more additional machine instructions to convert to the decimal floating point format.

2. The computer program product of claim 1, wherein the opcode, when a first value, indicates a zoned source and a long decimal floating point result.

3. The computer program product of claim 1, wherein the opcode, when a second value, indicates a zoned source and an extended decimal floating point result.

4. The computer program product of claim 1, wherein the sign control is specified in a mask field of the machine instruction.

5. The computer program product of claim 1, wherein the machine instruction further includes a length field specifying a length of the second operand.

6. The method of claim 1, wherein the executing further comprises reading the second operand from memory, and performing the converting on the second operand read from memory.

7. The computer program product of claim 1, wherein the executing further comprises determining a sign for the result, and wherein the placing comprises including the determined sign with the result in the first operand location.

8. The computer program product of claim 7, wherein the determining is based on the sign control.

9. The computer program product of claim 8, wherein based on the sign control being a first value, the determining comprises: reading a sign field from memory, the sign field being included in the second operand; and setting the sign from the sign field.

10. The computer program product of claim 8, wherein based on the sign control being a second value, the determining comprising forcing a positive sign for the result.

11. A computer system for executing a machine instruction in a central processing unit, the computer system comprising: a memory; and a processor in communications with the memory, wherein the computer system is configured to perform a method, said method comprising: obtaining a machine instruction for execution, the machine instruction being defined for computer execution according to a computer architecture, the machine instruction comprising: at least one opcode field to provide an opcode, the opcode identifying a convert from zoned to decimal floating point function; a first register field designating a first operand location; a second register field and a displacement field, wherein contents of a second register designated by the second register field are combined with contents of the displacement field to form an address of a second operand; and a sign control used to indicate whether the second operand has a sign field; and executing the machine instruction, the executing comprising: converting the second operand in a zoned format to a decimal floating point format, wherein the converting comprises: converting one or more triplets of zoned digits in the second operand to a corresponding one or more densely packed decimal groups, the corresponding one or more densely packed decimal groups provided as a first portion of a result; and converting a remaining zoned digit in the second operand to a corresponding bit sequence, the corresponding bit sequence being

provided as a second portion of the result; and placing the result in the first operand location, wherein the result is stored to the location in the decimal floating point format absent issuing one or more additional machine instructions to convert to the decimal floating point format.

12. The computer system of claim 11, wherein the opcode, when a first value, indicates a zoned source and a long decimal floating point result, and when a second value, indicates a zoned source and an extended decimal floating point result.

13. The computer system of claim 11, wherein the machine instruction further includes a length field specifying a length of the second operand.

14. The computer system of claim 11, wherein the executing further comprises reading the second operand from memory, and performing the converting on the second operand read from memory.

15. The computer system of claim 11, wherein the executing further comprises determining a sign for the result, and wherein the placing comprises including the determined sign with the result in the first operand location.

16. The computer system of claim 15, wherein the determining is based on the sign control, and wherein based on the sign control being a first value, the determining comprises: reading a sign field from memory, the sign field being included in the second operand; and setting the sign from the sign field.

17. The computer system of claim 15, wherein the determining is based on the sign control, and wherein based on the sign control being a second value, the determining comprising forcing a positive sign for the result.