CLAIMS

1. A computer program product for facilitating processing within a computing environment, the computer program product comprising: a non-transitory computer readable storage medium readable by a processing circuit and storing instructions for performing a method comprising: obtaining, by a general-purpose processor of the computing environment, an instruction to perform a function of a plurality of functions supported by the instruction, the instruction being a single architected instruction of an instruction set architecture that complies to an industry standard for compression; and executing, by the general-purpose processor, the instruction, the executing including: transforming, based on the function being a compression function or a decompression function, state of input data between an uncompressed form of the input data and a compressed form of the input data to provide a transformed state of data; and providing as output the transformed state of data to be used in performing a task; and wherein the function to be performed is a generate dynamic-Huffman table function, and wherein the executing comprises generating, based on the function being the generate dynamic-Huffman table function, a compressed representation of a dynamic-Huffman table to be used when the function to be performed, on another execution of the instruction, is the compression function or the decompression function.

~~2. The computer program product of claim 1, wherein the transforming the state of the input data uses a compression format that complies with the industry standard.~~

23. The computer program product of claim 12, wherein the transforming the state of the input data uses a compression format comprisinges a DEFLATE compression format.

34. The computer program product of claim 1, wherein the task is selected from a group of tasks consisting of: performing one or more operations that use the output, the output comprising compressed data; transmitting the output; performing one or more operations that use the output, the output comprising uncompressed data.

45. The computer program product of claim 1, wherein the instruction comprises an operation code field that includes an operation code to specify an operation and a plurality of register fields to specify a plurality of registers to be used by the instruction.

56. The computer program product of claim 45, wherein the plurality of registers comprises one register used to identify an output operand location to be used by the instruction as an output and another register used to identify

an input operand location to be used by the instruction as an input, the input depending on the function to be performed.

67. The computer program product of claim 56, wherein based on the function being the compression function, the input comprises data from the input operand location to be encoded to provide compressed data symbols stored to the output operand location, and wherein based on the function being the decompression function, the input comprises the compressed data symbols from the input operand location to be decoded to provide uncompressed data stored to the output operand location.

78. The computer program product of claim 45, wherein the instruction further uses a selected register to indicate the function of the plurality of functions to be performed by the instruction.

89. The computer program product of claim 78, wherein the instruction further uses another selected register to provide an address of a parameter block used by the instruction for one or more functions of the plurality of functions.

910. The computer program product of claim 1, wherein the plurality of functions includes a query function, the compression function, thea generate dynamic-Huffman table function and the decompression function.

~~11. The computer program product of claim 1, wherein the function to be performed is a generate dynamic-Huffman table function, and wherein the executing comprises generating, based on the function being the generate dynamic-Huffman table function, a compressed representation of a dynamic Huffman table to be used when the function to be performed, on another execution of the instruction, is the compression function or the decompression function.~~

102. A computer system for facilitating processing within a computing environment, the computer system comprising: a memory; and a general-purpose processor coupled to the memory, wherein the computer system is configured to perform a method comprising: obtaining, by the general-purpose processor, an instruction to perform a function of a plurality of functions supported by the instruction, the instruction being a single architected instruction of an instruction set architecture that complies to an industry standard for compression; and executing, by the general-purpose processor, the instruction, the executing including: transforming, based on the function being a compression function or a decompression function, state of input data between an uncompressed form of the input

data and a compressed form of the input data to provide a transformed state of data; and providing as output the transformed state of data to be used in performing a task; and wherein the function to be performed is a generate dynamic-Huffman table function, and wherein the executing comprises generating, based on the function being the generate dynamic-Huffman table function, a compressed representation of a dynamic-Huffman table to be used when the function to be performed, on another execution of the instruction, is the compression function or the decompression function.

~~13. The computer system of claim 12, wherein the transforming the state of the input data uses a compression format that complies with the industry standard.~~

114. The computer system of claim 102, wherein the instruction comprises an operation code field that includes an operation code to specify an operation and a plurality of register fields to specify a plurality of registers to be used by the instruction.

125. The computer system of claim 114, wherein the plurality of registers comprises one register used to identify an output operand location to be used by the instruction as an output and another register used to identify an input operand location to be used by the instruction as an input, the input depending on the function, wherein based on the function being the compression function, the input comprises data from the input operand location to be encoded to provide compressed data symbols stored to the output operand location, and wherein based on the function being the decompression function, the input comprises the compressed data symbols from the input operand location to be decoded to provide uncompressed data stored to the output operand location.

~~16. The computer system of claim 12, wherein the function to be performed is a generate dynamic Huffman table function, and wherein the executing comprises generating, based on the function being the generate dynamic-Huffman table function, a compressed representation of a dynamic Huffman table to be used when the function to be performed, on another execution of the instruction, is the compression function or the decompression function.~~

137. A computer-implemented method of facilitating processing within a computing environment, the computer-implemented method comprising: obtaining, by a general-purpose processor of the computing environment, an instruction to perform a function of a plurality of functions supported by the instruction, the instruction being a single architected instruction of an instruction set architecture that complies to an industry standard for compression; and executing, by the general-purpose processor, the instruction, the executing including: transforming, based on the

function being a compression function or a decompression function, state of input data between an uncompressed form of the input data and a compressed form of the input data to provide a transformed state of data; and providing as output the transformed state of data to be used in performing a task; and wherein the function to be performed is a generate dynamic-Huffman table function, and wherein the executing comprises generating, based on the function being the generate dynamic-Huffman table function, a compressed representation of a dynamic-Huffman table to be used when the function to be performed, on another execution of the instruction, is the compression function or the decompression function.

~~18. The computer-implemented method of claim 17, wherein the transforming the state of the input data uses a compression format that complies with the industry standard.~~

14~~9~~. The computer-implemented method of claim 13~~7~~, wherein the instruction comprises an operation code field that includes an operation code to specify an operation and a plurality of register fields to specify a plurality of registers to be used by the instruction, wherein the plurality of registers comprises one register used to identify an output operand location to be used by the instruction as an output and another register used to identify an input operand location to be used by the instruction as an input, the input depending on the function, wherein based on the function being the compression function, the input comprises data from the input operand location to be encoded to provide compressed data symbols stored to the output operand location, and wherein based on the function being the decompression function, the input comprises the compressed data symbols from the input operand location to be decoded to provide uncompressed data stored to the output operand location.

~~20. The computer-implemented method of claim 17, wherein the function to be performed is a generate dynamic-Huffman table function, and wherein the executing comprises generating, based on the function being the generate dynamic-Huffman table function, a compressed representation of a dynamic-Huffman table to be used when the function to be performed, on another execution of the instruction, is the compression function or the decompression function.~~