## CLAIMS

1. A method of executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said method comprising:

responsive to determining that a subchannel identified by the Start Subchannel instruction is an Asynchronous Data Mover (ADM) subchannel, performing:

obtaining an operation request block from main storage, the operation request block comprising an address of an operation block;

based on the address of the operation block, obtaining the operation block from main storage, the operation block consisting of a request block, a response block, and one or more move specification blocks (MSBs), wherein the request block comprises an MSB count field having a value indicating the number of one or more MSBs included in and referenced by the operation block, wherein the response block is configured to hold exception conditions, wherein each move specification block is configured to include an operation code field, a block count field, a main storage address field, a storage class memory address field, a block size field and a flags field;

for each MSB block of the operation block, obtaining a move specification block of the one or more move specification blocks, and:

determining based on the flags field that the obtained move specification block is configured to obtain a list of one or more indirect data address words, the list of one or more indirect data address words located at a first main storage address of the main storage address field of the obtained MSB;

for each block of data specified by the obtained MSB, obtaining from the list of one or more indirect data address words a second main storage address, wherein a number of blocks and a block size are determined based on the block count field and the block size field of the obtained MSB;

determining based on an operation code of the operation code field in the obtained move specification block that the obtained move specification block is configured to move blocks of data; and

based on the obtained move specification block, moving each block of data between the main storage and the storage class memory, wherein an address of a main storage location used for the move of a block of data is obtained using a respective second main storage address and

an address of the storage class memory used for the move is obtained using the storage class memory address field.

2. The method of claim 1, wherein a number of indirect data address words in the list is a sum of a number specified by the block count field and a number of indirect data address words that specify a branch to next indirect data address word, the branch to next indirect data address word specified in the flags field.

3. The method of claim 1, wherein responsive to the operation code in the operation code field of the obtained move specification block being set to a first value, the operation code designates a read operation and the moving comprises moving each block of data from storage class memory to main storage.

4. The method of claim 1, wherein responsive to the operation code in the operation code field of the obtained move specification block being set to a second value, the operation code designates a write operation, and the moving comprises moving each block of data from main storage to storage class memory.

5. The method of any preceding claim, wherein the size designated in the block size field of the obtained move specification block is either 4K or 1M.

6. The method of claim 1, further comprising generating one or more status conditions, responsive to completion of the moving, the one or more status conditions accessible to an issuer of the Start Subchannel instruction.

7. The method of claim 1, wherein the response block is populated responsive to an error condition detected during execution of the move operation.

8. A computer system for executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said computer system comprising:

a memory; and

a processor in communications with the memory, wherein the computer system is configured to perform the method according to any preceding claim.

9. A computer program product for executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said 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 according to any of claims 1 to 7.

AMENDED CLAIMS
received by the International Bureau on 21 November 2012 (21.11.12)

1. A method of executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said method comprising:

responsive to determining that a subchannel identified by the Start Subchannel instruction is an Asynchronous Data Mover (ADM) subchannel, performing:

obtaining an operation request block from main storage, the operation request block comprising an address of an operation block;

based on the address of the operation block, obtaining the operation block from main storage, the operation block consisting of a request block, a response block, and one or more move specification blocks (MSBs), wherein the request block comprises an MSB count field having a value indicating the number of one or more MSBs included in and referenced by the operation block, wherein the response block is configured to hold exception conditions, wherein each move specification block is configured to include an operation code field, a block count field, a main storage address field, a storage class memory address field, a block size field and a flags field;

obtaining a move specification block from the operation block, and:

determining based on the flags field that the obtained move specification block is configured to obtain a list of one or more indirect data address words, wherein an indirect address word designates a main storage location to be used in data transfer, and wherein a first indirect data address word of the list of one or more indirect data address words is located at a first main storage address of the main storage address field of the obtained MSB, the obtained MSB specifying one or more blocks of data;

for each block of data specified by the obtained MSB, obtaining from the list of one or more indirect data address words a second main storage address, wherein a number of blocks and a block size are determined based on the block count field and the block size field of the obtained MSB;

determining based on an operation code of the operation code field in the obtained move specification block that the obtained move specification block is configured to move blocks of data; and

based on the obtained move specification block, moving each block of data between the main storage and the storage class memory, wherein an address of a main storage location used for the move of a block of data is obtained using a respective second main

storage address and an address of the storage class memory used for the move is obtained using the storage class memory address field.

2. The method of claim 1, wherein a number of indirect data address words in the list is a sum of a number specified by the block count field and a number of indirect data address words that specify a branch to next indirect data address word, the branch to next indirect data address word specified in the flags field.

3. The method of claim 1, wherein responsive to the operation code in the operation code field of the obtained move specification block being set to a first value, the operation code designates a read operation and the moving comprises moving each block of data from storage class memory to main storage.

4. The method of claim 1, wherein responsive to the operation code in the operation code field of the obtained move specification block being set to a second value, the operation code designates a write operation, and the moving comprises moving each block of data from main storage to storage class memory.

5. The method of any preceding claim, wherein the size designated in the block size field of the obtained move specification block is either 4K or 1M.

6. The method of claim 1, further comprising generating one or more status conditions, responsive to completion of the moving, the one or more status conditions accessible to an issuer of the Start Subchannel instruction.

7. The method of claim 1, wherein the response block is populated responsive to an error condition detected during execution of the move operation.

8. A computer system for executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said computer system comprising:

a memory; and

a processor in communications with the memory, wherein the computer system is configured to perform the method according to any preceding claim.

9. A computer program product for executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said 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 according to any of claims 1 to 7.

## CLAIMS

1. A method of executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said method comprising:

responsive to determining that a subchannel identified by the Start Subchannel instruction is an Asynchronous Data Mover (ADM) subchannel, performing:

obtaining an operation request block from main storage, the operation request block comprising an address of an operation block;

based on the address of the operation block, obtaining the operation block from main storage, the operation block consisting of a request block, a response block, and one or more move specification blocks (MSBs), wherein the request block comprises an MSB count field having a value indicating the number of one or more MSBs associated with the operation block, wherein the response block is configured to hold exception conditions, wherein each move specification block is configured to include an operation code field, a block count field, a main storage address field, a storage class memory address field, a block size field and a flags field;

obtaining a move specification block from the operation block, and:

determining based on the flags field that the obtained move specification block is configured to obtain a list of one or more indirect data address words, wherein an indirect address word designates a main storage location to be used in data transfer, and wherein an address of a first indirect data address word of the list of one or more indirect data address words is located at a first main storage address of the main storage address field of the obtained MSB, the obtained MSB specifying one or more blocks of data;

for each block of data specified by the obtained MSB, obtaining from the list of one or more indirect data address words a second main storage address, wherein a number of blocks and a block size are determined based on the block count field and the block size field of the obtained MSB;

determining based on an operation code of the operation code field in the obtained move specification block that the obtained move specification block is configured to move blocks of data; and

based on the obtained move specification block, moving each block of data between the main storage and the storage class memory, wherein an address of a main storage location used for the move of a block of data is obtained using a respective second main storage address and an

address of the storage class memory used for the move is obtained using the storage class memory address field.

2. The method of claim 1, wherein a number of indirect data address words in the list is a sum of a number specified by the block count field and a number of indirect data address words that specify a branch to a next indirect data address word, wherein the branch to the next indirect data address word is specified in the flags field.

3. The method of claim 1, wherein responsive to the operation code in the operation code field of the obtained move specification block being set to a first value, the operation code designates a read operation and the moving comprises moving each block of data from storage class memory to main storage.

4. The method of claim 1, wherein responsive to the operation code in the operation code field of the obtained move specification block being set to a second value, the operation code designates a write operation, and the moving comprises moving each block of data from main storage to storage class memory.

5. The method of any one of the preceding claims, wherein the size designated in the block size field of the obtained move specification block is either 4K or 1M.

6. The method of claim 1, further comprising generating one or more status conditions, responsive to completion of the moving, the one or more status conditions accessible to an issuer of the Start Subchannel instruction.

7. The method of claim 1, wherein the response block is populated responsive to an error condition detected during execution of the move operation.

8. A computer system for executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said computer system comprising:

a memory; and

a processor in communications with the memory, wherein the computer system is configured to perform the method according to any preceding claim.

9. A computer program product for executing a Start Subchannel instruction in a computing environment comprising main storage and storage class memory, said 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 according to any one of claims 1 to 7.