CLAIMS

1. A method of managing interruption requests in a computing environment, comprising steps of:

responsive to executing a Modify PCI Function Controls (MPFC) instruction register interruptions operation that specifies a function handle of an adapter, specifying a location in memory of an adapter interruption bit vector (AIBV) of the adapter, the AIBV included in an array of one or more AIBVs, and a location in memory of an adapter interruption summary bit (AISB) of an AISB array;

receiving from the adapter a request for interruption; and

responsive to the received request, setting an indicator in the AIBV indicating an event from the adapter and setting the AISB indicating an indicator is set in the AIBV.

2. The method of claim 1, wherein the method further comprises presenting an interruption to an operating system, the interruption responsive to the request for interruption.

3. The method of claim 2, wherein the request for interruption represents a plurality of message signaled interruptions, and the interruption to the operating system is part of an input/output adapter event notification for the operating system.

4. The method of claim 2, wherein the method further comprises obtaining, responsive to the presenting, one or more AIBV indications for one or more adapters specifying at least one reason for interruption per adapter.

5. The method of claim 4, wherein the obtaining comprises obtaining a plurality of AIBV indications specifying a plurality of reasons for interruption, the plurality of reasons for interruption corresponding to the plurality of requests for interruption.

6. The method of claim 5, wherein the obtaining comprises using the AISB in obtaining the one or more AIBV indications in the one or more AIBVs.

7. The method of claim 1, wherein the setting the indicator in the AIBV comprises:

using an identifier of the request from the adapter to obtain a device table entry, the device table entry comprising a value specifying a number of interruptions that are allowed for the adapter;

determining whether a vector number provided in the request is within the number of interruptions allowed for the adapter;

responsive to determining the vector number is within the allowed number of interruptions, using one or more parameters of the device table entry to locate a starting position of the AIBV; and

using the vector number to set the indicator in the AIBV.

8. A system comprising means adapted for carrying out all the steps of the method according to any preceding method claim.

9. A computer program comprising instructions for carrying out all the steps of the method according to any preceding method claim, when said computer program is executed on a computer system.

CLAIMS

1. A computer program product for managing interruption requests in a computing environment, the computer program product comprising:

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

based on executing a register interruptions operation of a Modify PCI Function Controls (MPFC) instruction that specifies a function handle of an adapter, specifying a location in system memory of an adapter interruption bit vector (AIBV) of the adapter, the AIBV included in an array of one or more AIBVs, and a location in system memory of an adapter interruption summary bit (AISB) of an AISB array;

receiving from the adapter a request for interruption; and

based on the received request, setting, by an input/output (I/O) hub coupled to the adapter, an indicator in the AIBV indicating a type of event from the adapter and setting the AISB indicating an indicator is set in the AIBV, wherein the setting the indicator in the AIBV comprises: determining whether a vector number provided in the request is within a number of interruptions allowed for the adapter; and based on determining the vector number is within the allowed number of interruptions, using the vector number, an AIBV offset, and an AIBV address to determine the indicator in the AIBV to be set.

2. The computer program product of claim 1, wherein the method further comprises presenting an interruption to an operating system, the interruption based on the request for interruption.

3. The computer program product of claim 2, wherein the request for interruption represents a plurality of message signaled interruptions, and the interruption to the operating system is part of an input/output adapter event notification for the operating system.

4. The computer program product of claim 2, wherein the method further comprises obtaining, based on the presenting, one or more AIBV indications for one or more adapters specifying at least one reason for interruption per adapter.

5. The computer program product of claim 4, wherein the obtaining comprises obtaining a plurality of AIBV indications specifying a plurality of reasons for interruption, the plurality of reasons for interruption corresponding to the plurality of requests for interruption.

6. The computer program product of claim 5, wherein the obtaining comprises using the AISB in obtaining the one or more AIBV indications in the one or more AIBVs.

7. The computer program product of claim 1, wherein the setting the indicator in the AIBV comprises: using an identifier of the request from the adapter to obtain a device table entry, the device table entry comprising a value specifying the number of interruptions that are allowed for the adapter; and based on determining the vector number is within the allowed number of interruptions, using one or more parameters of the device table entry to locate a starting position of the AIBV.

8. A computer system for managing interruption requests in a computing environment, the computer system comprising:

a memory; and

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

based on executing a register interruptions operation of a Modify PCI Function Controls (MPFC) instruction that specifies a function handle of an adapter, specifying a location in system memory of an adapter interruption bit vector (AIBV) of the adapter, the AIBV included in an array of one or more AIBVs, and a location in system memory of an adapter interruption summary bit (AISB) of an AISB array;

receiving from the adapter a request for interruption; and

based on the received request, setting, by an input/output (I/O) hub coupled to the adapter, an indicator in the AIBV indicating a type of event from the adapter and setting the AISB indicating an indicator is set in the AIBV, wherein the setting the indicator in the AIBV comprises:

determining whether a vector number provided in the request is within a number of interruptions allowed for the adapter; and

based on determining the vector number is within the allowed number of interruptions, using the vector number, an AIBV offset, and an AIBV address to determine the indicator in the AIBV to be set.

9. The computer system of claim 8, wherein the method further comprises presenting an interruption to an operating system, the interruption based on the request for interruption.

10. The computer system of claim 9, wherein the request for interruption represents a plurality of message signaled interruptions, and the interruption to the operating system is part of an input/output adapter event notification for the operating system.

11. The computer system of claim 9, wherein the method further comprises obtaining, based on the presenting, one or more AIBV indications for one or more adapters specifying at least one reason for interruption per adapter.

12. The computer system of claim 11, wherein the obtaining comprises obtaining a plurality of AIBV indications specifying a plurality of reasons for interruption, the plurality of reasons for interruption corresponding to the plurality of requests for interruption.

13. The computer system of claim 12, wherein the obtaining comprises using the AISB in obtaining the one or more AIBV indications in the one or more AIBVs.

14. The computer system of claim 8, wherein the setting the indicator in the AIBV comprises: using an identifier of the request from the adapter to obtain a device table entry, the device table entry comprising a value specifying the number of interruptions that are allowed for the adapter; and based on determining the vector number is within the allowed number of interruptions, using one or more parameters of the device table entry to locate a starting position of the AIBV.

15. The computer program product of claim 1, wherein the AIBV for the adapter comprises a plurality of indicators for the adapter, the plurality of indicators indicating a plurality of types of events associated with the adapter.

16. The computer program product of claim 1, wherein the array of one or more AIBVs includes another AIBV for another adapter, and wherein a number of indicators

in the AIBV for the adapter is different from the number of indicators in the another AIBV for the another adapter.

17. The computer program product of claim 1, wherein the function handle includes an enable indicator that indicates whether the handle is enabled, a number that identifies the adapter, and an instance number to indicate a particular instance of the handle.

18. The computer system of claim 8, wherein the AIBV for the adapter comprises a plurality of indicators for the adapter, the plurality of indicators indicating a plurality of types of events associated with the adapter.

19. The computer system of claim 8, wherein the array of one or more AIBVs includes another AIBV for another adapter, and wherein a number of indicators in the AIBV for the adapter is different from the number of indicators in the another AIBV for the another adapter.

20. The computer system of claim 8, wherein the function handle includes an enable indicator that indicates whether the handle is enabled, a number that identifies the adapter, and an instance number to indicate a particular instance of the handle.