CLAIMS

1. A computer program product for facilitating communications in a communications environment, 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 comprising:

obtaining, by a processor of the communications environment from a sender of the communications environment, pre-authorization to convert from a synchronous data transfer to an asynchronous data transfer;

obtaining, by the processor from the sender, a request to send data to a receiver of the communications environment;

initiating, by the processor, a sending of the data to the receiver, wherein the initiating employs the synchronous data transfer;

determining, by the processor, that the synchronous data transfer is to be converted to an asynchronous data transfer; and

responsive to the determining, automatically converting by the processor the synchronous data transfer to the asynchronous data transfer to complete the sending of the data to the receiver, wherein the automatically converting is independent of actions by the sender other than the pre-authorization.

2. The computer program product of claim 1, wherein the determining comprises determining that the receiver is delayed in being able to receive the data at a time the data is being sent, and responsive thereto, automatically converting the synchronous data transfer to the asynchronous data transfer to complete the sending of the data at a time in which the receiver can receive the data.

3. The computer program product of claim 2, wherein the pre-authorization includes obtaining an indication of a memory block to track the asynchronous data transfer.

4. The computer program product of claim 3, wherein the automatically converting comprises:

storing the request in the memory block;

queuing the memory block to a queue of the receiver;

determining that the receiver is able to receive the data; and

sending the data to the receiver using the memory block.

5. The computer program product of claim 4, wherein the determining that the receiver is able to receive the data comprises determining that the receiver has an empty buffer to receive the data.

6. The computer program product of claim 4, wherein the method further comprises indicating completion of the sending to the sender.

7. The computer program product of claim 6, wherein the indicating completion comprises posting an address of the memory block on a completion queue in memory accessible to the sender.

8. The computer program product of claim 7, wherein the method further comprises generating an interruption to the sender, responsive to posting the address on the completion queue.

9. The computer program product of claim 2, wherein the determining the receiver is delayed comprises determining that a receive buffer is unavailable to receive the data.

10. The computer program product of claim 1, wherein the method further comprises obtaining another request from the sender, the another request to be sent to another receiver synchronously prior to completion of sending the request to the receiver asynchronously.

11. The computer program product of claim 1, wherein the method further comprises receiving one or more additional requests from the sender prior to completing the sending of the data asynchronously to the receiver, wherein data of the one or more additional requests can be sent synchronously or asynchronously to one or more receivers.

12. The computer program product of claim 1, wherein the method further comprises maintaining a data arrival order at the receiver, responsive to converting from the synchronous data transfer to the asynchronous data transfer.

13. A computer system for facilitating communications in a communications environment, said 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, by a processor of the communications environment from a sender of the communications environment, pre-authorization to convert from a synchronous data transfer to an asynchronous data transfer;

obtaining, by the processor from the sender, a request to send data to a receiver of the communications environment;

initiating, by the processor, a sending of the data to the receiver, wherein the initiating employs the synchronous data transfer;

determining, by the processor, that the synchronous data transfer is to be converted to an asynchronous data transfer; and

responsive to the determining, automatically converting by the processor the synchronous data transfer to the asynchronous data transfer to complete the sending of the data to the receiver, wherein the automatically converting is independent of actions by the sender other than the pre-authorization.

14. The computer system of claim 13, wherein the determining comprises determining that the receiver is delayed in being able to receive the data at a time the data is being sent, and responsive thereto, automatically converting the synchronous data transfer to the asynchronous data transfer to complete the sending of the data at a time in which the receiver can receive the data.

15. The computer system of claim 14, wherein the pre-authorization includes obtaining an indication of a memory block to track the asynchronous data transfer.

16. The computer system of claim 15, wherein the automatically converting comprises:

storing the request in the memory block;

queuing the memory block to a queue of the receiver;

determining that the receiver is able to receive the data; and

sending the data to the receiver using the memory block.

17. The computer system of claim 16, wherein the determining that the receiver is able to receive the data comprises determining that the receiver has an empty buffer to receive the data.

18. The computer system of claim 16, wherein the method further comprises indicating completion of the sending to the sender, wherein the indicating completion comprises posting an address of the memory block on a completion queue in memory accessible to the sender, and wherein the method further comprises generating an interruption to the sender, responsive to posting the address on the completion queue, wherein the determining the receiver is delayed comprises determining that a receive buffer is unavailable to receive the data.

19. A method of facilitating communications in a communications environment, said method comprising:

obtaining, by a processor of the communications environment from a sender of the communications environment, pre-authorization to convert from a synchronous data transfer to an asynchronous data transfer;

obtaining, by the processor from the sender, a request to send data to a receiver of the communications environment;

initiating, by the processor, a sending of the data to the receiver, wherein the initiating employs the synchronous data transfer;

determining, by the processor, that the synchronous data transfer is to be converted to an asynchronous data transfer; and

responsive to the determining, automatically converting by the processor the synchronous data transfer to the asynchronous data transfer to complete the sending of the

data to the receiver, wherein the automatically converting is independent of actions by the sender other than the pre-authorization.

20. The method of claim 19, wherein the determining comprises determining that the receiver is delayed in being able to receive the data at a time the data is being sent, and responsive thereto, automatically converting the synchronous data transfer to the asynchronous data transfer to complete the sending of the data at a time in which the receiver can receive the data.

Claims

1. A computer program product for facilitating communications in a communications environment, said 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:
obtaining, by a processor of the communications environment from a sender of the communications environment, pre-authorization to convert from a synchronous data transfer to an asynchronous data transfer, wherein the pre-authorization includes obtaining an indication of a memory block to track the asynchronous data transfer; obtaining, by the processor from the sender, a request to send data to a receiver of the communications environment; initiating, by the processor, a sending of the data to the receiver, wherein the initiating employs the synchronous data transfer; determining, by the processor, that the synchronous data transfer is to be converted to an asynchronous data transfer; and based on the determining, automatically converting by the processor the synchronous data transfer to the asynchronous data transfer to complete the sending of the data to the receiver, wherein the automatically converting is independent of actions by the sender other than the pre-authorization.

2. The computer program product of claim 1, wherein the determining comprises determining that the receiver is delayed in being able to receive the data at a time the data is being sent, and based thereon, automatically converting the synchronous data transfer to the asynchronous data transfer to complete the sending of the data at a time in which the receiver can receive the data.

3. The computer program product of claim 2, wherein the automatically converting comprises:
storing the request in the memory block; queuing the memory block to a queue of the receiver; determining that the receiver is able to receive the data; and sending the data to the receiver using the memory block.

4. The computer program product of claim 3, wherein the determining that the receiver is able to receive the data comprises determining that the receiver has an empty buffer to receive the data.

5. The computer program product of claim 3, wherein the method further comprises indicating completion of the sending to the sender.

6. The computer program product of claim 5, wherein the indicating completion comprises posting an address of the memory block on a completion queue in memory accessible to the sender.

7. The computer program product of claim 6, wherein the method further comprises generating an interruption to the sender, based on posting the address on the completion queue.

8. The computer program product of claim 2, wherein the determining the receiver is delayed comprises determining that a receive buffer is unavailable to receive the data.

9. The computer program product of claim 1, wherein the method further comprises obtaining another request from the sender, the another request to be sent to another receiver synchronously prior to completion of sending the request to the receiver asynchronously.

10. The computer program product of claim 1, wherein the method further comprises receiving one or more additional requests from the sender prior to completing the sending of the data asynchronously to the receiver, wherein data of the one or more additional requests can be sent synchronously or asynchronously to one or more receivers.

11. The computer program product of claim 1, wherein the method further comprises maintaining a data arrival order at the receiver, based on converting from the synchronous data transfer to the asynchronous data transfer.

12. A computer system for facilitating communications in a communications environment, said 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, by a processor of the communications environment from a sender of the communications environment, pre-authorization to convert from a synchronous data transfer to an asynchronous data transfer, wherein the pre-authorization includes obtaining an indication of a memory block to track the asynchronous data transfer; obtaining, by the processor from the sender, a request to send data to a receiver of the communications environment; initiating, by the processor, a sending of the data to the receiver, wherein the initiating employs the synchronous data transfer; determining, by the processor, that the synchronous data transfer is to be converted to an asynchronous data transfer; and based on the determining, automatically converting by the processor the synchronous data transfer to the asynchronous data transfer to complete the sending of the data to the receiver, wherein the automatically converting is independent of actions by the sender other than the pre-authorization.

13. The computer system of claim 12, wherein the determining comprises determining that the receiver is delayed in being able to receive the data at a time the data is being sent, and based thereon, automatically converting the synchronous data transfer to the asynchronous data transfer to complete the sending of the data at a time in which the receiver can receive the data.

14. The computer system of claim 13, wherein the automatically converting comprises:
storing the request in the memory block; queuing the memory block to a queue of the receiver; determining that the receiver is able to receive the data; and sending the data to the receiver using the memory block.

15. The computer system of claim 14, wherein the determining that the receiver is able to receive the data comprises determining that the receiver has an empty buffer to receive the data.

16. The computer system of claim 14, wherein the method further comprises indicating completion of the sending to the sender.

17. The computer system of claim 16, wherein the indicating completion comprises posting an address of the memory block on a completion queue in memory accessible to the sender.

18. The computer system of claim 17, wherein the method further comprises generating an interruption to the sender, based on posting the address on the completion queue.

19. The computer program product of claim 12, wherein the method further comprises obtaining another request from the sender, the another request to be sent to another receiver synchronously prior to completion of sending the request to the receiver asynchronously.

20. The computer program product of claim 12, wherein the method further comprises receiving one or more additional requests from the sender prior to completing the sending of the data asynchronously to the receiver, wherein data of the one or more additional requests can be sent synchronously or asynchronously to one or more receivers.