Appendix D: Glossary

This appendix contains a glossary of terms found in this manual.

aggregate	See connection aggregate.
array module	A collection of cooperating cell programs and existing array modules.
array program	A program that defines the networks between cells and the mapping between cell programs and cells in an array module.
cell program	A program that runs on an iWarp system.
computation agent	The CPU of a cell.
communication agent	The part of the cell that handles inter-cell communication.
connection	See plain connection.
connection aggregate	A logical channel that is composed of two or more connections that are linked so data from one connection is automatically forwarded to the other connection.
destination	A cell that receives data over a connection.
express	1) The state of a logical channel with respect to a cell such that the cell's computation agent does not participate in the movement of data on the channel. Data is forwarded to a neighboring cell. 2) To couple an input connection with an output connection. See *link*.
forward	To pass data through a cell without using the computation agent.
gate	The interface between the computation and communication agents. A gate is bound to a port. Data that is transferred to a gate is transferred to the network that is bound to the gate.
header	Tagged data signifying the start of either a connection or a message. A connection header creates a connection. A message header addresses a block of data to a linkage cell or to the ultimate destination of an aggregate.
input connection	The destination end-point of a connection or aggregate.
link	To couple an input connection with an output connection to form an aggregate.
local mode	The state of the network at a cell where the cell does not stop data passing over the network. A cell can read from and write to the network. The starting or ending cell of a network is always in local node.

logical channel	An allocation of pathway-management resources across a set of cells. The resources support communication along the pathways connecting the cells. Communication over a logical channel is unidirectional, follows a fixed route, is independent of communication over other logical channels, and is inherently reliable. A logical channel is guaranteed a share of the physical pathway bandwidth between cells.
match	The action performed by the communication agent when a connection or message header address is recognized by an address match cam. A match occurs when a header reaches the top of queue (TOQ) and is recognized. This causes data transmission to stop, leaving the header at TOQ to be sampled, consumed, or forwarded by the computation agent.
mesh	The physical interconnection of iWarp cells that constitutes an iWarp processor array.
message	A capsule for data carried over a logical channel. Message headers and trailers are defined and recognized by the iWarp communication agent.
network	A set of pathways that connect a subset of cells in a physical array.
origin	A cell that creates a connection over which data is sent.
output connection	The source endpoint of a connection or aggregate.
partner	An input or output connection that is linked to another connection as a result of an express operation.
pathway	1) In PathLib, a physical bus connecting adjacent cells. 2) In PCS, a connection between two cells that are not necessarily adjacent. A pathway consists of chained logical channels.
pathway control table (PCT)	The hardware structure within the iWarp communication agent that stores the states of logical channels.
PCT entry	A record in the PCT that maintains state information for a logical channel, including the recipient PCT index, counts of local and recipient available queue space, and an 8-word data queue.
PCT index	The index into a PCT for a specific PCT entry. Also, the number by which a PathLib user refers to a connection; it is an integer defined and understood by the communication agent to designate a PCT entry.
plain connection	An instance of a logical channel created by PathLib. A connection has three parts: an origin cell, a route, and a destination cell. Any data sent to the connection from the origin cell travels along the route and arrives at the destination cell. Connections can be linked to form aggregates.
port	A data structure that a cell program uses to access a network. A port contains information about the network and is used to transfer data on a network.

routing cell	A cell along a connection that is neither the origin or the destination.
routing destination	A cell addressed by the connection header as a turning point on the route to the ultimate destination of the connection.
recipient PCT entry (RPE)	A PCT entry on a neighboring cell.
recipient PCT entry index (RPI)	A cell's reference to a PCT entry on a neighboring cell.
spoolgate	Any of eight physical interfaces between the computation agent and the communication agent through which spool transfer operations may occur.
spool index	The number by which a PathLib user refers to a spoolgate.
spooling	The transmission of data to and from local memory using spoolgates. Spooling requires no intervention from the computation agent and occurs in parallel with computation agent operations. Spooling allows a cell program to initiate data transfer between local memory and a logical channel and continue its program while the transfer occurs concurrently.
stop	To unlink input and output connections so data is no longer forwarded by the communication agent.
stop condition	The set of sentinels that will cause a stop.
streamgate	Any of four physical ports between the computation agent and the communication agent by which the cell program may send and receive data over a connection. Streamgates are manifested as registers on the cell. A streamgate is bound to a connection to support streaming.
streaming	The programmed word-by-word transmission of data over a connection using a streamgate.
systolic communication	The transmission of data directly between the network and the computation agent without buffering the data.
top of queue (TOQ)	The next word to be read from an input connection. Each PCT entry contains a FIFO buffer that pipelines data for a logical channel. Usually, TOQ is only relevant with respect to input connections since it provides the next piece of data to be received or forwarded.
trailer	The last word of either a connection or a message. A connection trailer causes the deallocation of PCT entry resources that support the connection, thus destroying it. A message trailer marks the end of a block of data.
ultimate destination	1)The destination cell for a connection header. The cell that accepts a connection header. 2) The last cell in an aggregate.