INDUSTRY LEADERS FORM RDMA CONSORTIUM TO ADDRESS GROWING MEMORY BANDWIDTH, CPU PROCESSING DEMANDS

Open Consortium Developing Specifications for Remote Direct Memory Access Over TCP/IP Networks

CHICAGO, May 31, 2002 – Adaptec (Nasdaq: ADPT), Broadcom (Nasdaq: BRCM), HP (NYSE: HPQ), IBM (NYSE: IBM), Intel (Nasdaq: INTC), Microsoft Corp. (Nasdaq: MSFT) and Network Appliance (Nasdaq: NTAP) today announced the Remote Direct Memory Access (RDMA) Consortium, an independent consortium formed to develop the architectural specifications necessary to implement products that provide RDMA over TCP/IP networks, including Ethernet-based networks. These specifications will help organizations meet increasing demands for networking bandwidth and speed that are currently growing faster than the processing power and memory bandwidth of the compute nodes that process networking traffic.

RDMA technology enables removal of data copy operations and reduction in latencies by allowing one computer to directly place information in another computer’s memory with minimal demands on memory bus bandwidth and CPU processing overhead, while preserving memory protection semantics. Today, communications over TCP/IP typically require copy operations, which add latency and consume significant CPU and memory resources.

RDMA over TCP/IP defines the interoperable specifications to support RDMA operations over standard TCP/IP networks. The RDMA Consortium will create specifications for a complete RDMA solution, which include RDMA, DDP (Direct Data Placement) and framing protocols over TCP/IP.

The RDMA Consortium is complementary to the Internet Engineering Task Force (IETF), a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. The RDMA Consortium member companies and individuals are active participants.
in the IETF process. In addition, the IETF has recognized the importance of RDMA as a viable network practice and is expected to charter an "RDMA over Internet Protocol Suite" Working Group in the coming months. The RDMA Consortium membership agreement specifies that the Consortium will submit draft specifications to the appropriate IETF working groups for consideration.

Version 1.0 of the RDMA over TCP/IP architectural specifications are expected to be completed by RDMA Consortium members in the second half of 2002 with a goal of supporting product implementation in the 2003/2004 timeframe. The final specifications for RDMA over TCP/IP will be determined by a wide representation of industry partners in the RDMA Consortium and appropriate industry standards organizations.

The RDMA Consortium is an open forum and is actively encouraging participation and contribution from additional technology companies towards developing the new specifications. Additional information about the RDMA Consortium, including application procedures, can be found at [http://www.rdmaconsortium.org](http://www.rdmaconsortium.org).

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**About RDMA Consortium**

The RDMA Consortium is an open industry forum chartered to develop architectural specifications necessary to implement products that provide RDMA technology over TCP/IP. Membership information, contacts for respective founding companies and other RDMA Consortium materials can be found at [http://www.rdmaconsortium.org](http://www.rdmaconsortium.org).

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