Poly-Messenger[®]/MCAPI

Poly-Messenger[®]/**MCAPI** provides flexible, efficient, standardized communications for closely distributed computing - multiple cores on a chip and/or multiple processor chips on a board.

MCAPI

MCAPI is a standard light weight communications API defined for closely distributed embedded computing, from the Multicore Association. MCAPI provides three communications modes:

- Connectionless Messages
- Connection Oriented Packet Channels
- Connection Oriented Scalar Channels

Both blocking and non-blocking communication is provided for message and packets.

Simplification

Poly-Messenger/MCAPI abstracts communications for multicore application developers, hiding the underlying system software and hardware, such as Operating Systems, number and type of cores and type of physical transports. Users simply choose the appropriate Poly-Messenger library components for the target system. A system with more than one multicore chip will have different physical transports and may require routing. Poly-Messenger seamlessly handles the routing and multiple transports.



Performance

Poly-Messenger is easily configured for the application and the target system which helps to balance performance and resource utilization. Performance goals are to maximize throughput, while keeping the run-time overhead for communication to a minimum. Poly-Messenger always uses the shortest path between nodes.

Portability and Reuse

Poly-Messenger/MCAPI provides scalability and portability when the application's complexity increases or its multicore platform changes. The same consistent API and programming model enables the application to scale from one to many cores and across homogenous or heterogeneous cores.

About PolyCore Software, Inc.

PolyCore Software, Inc., provides run-time solutions and tools for multicore platforms simplifying application migration to multicore, while preserving existing software investments thus improving time to market while reducing development costs and risk.

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PolyCore Software, Inc. 533 Airport Blvd., Suite 400 Burlingame, CA, 94010, USA Tel: (650) 570-5942 E-mail: info@polycoresoftware.com www.polycoresoftware.com

Poly-Generator[™] Communications Topology Generator

Poly-Generator[™] is a multicore communications topology generator that creates a validated topology definition of the infrastructure for the Poly-Messenger communication.



Topology Map

Poly-Generator[™]

The Poly-Mapper, Poly-Generator and Poly-Messenger/MCAPI combination provides separation between the multicore application and the communications topology. MCAPI-ready functional modules are easily re-mapped to different cores, at configuration time, and the topology resources and configuration are modified and optimized, without modification of the application source code. This allows the application developer to quickly and accurately evaluate different mappings and configuration to balance performance and resource allocation.

Application and Topology Separation

The Poly-Mapper, Poly-Generator and Poly-Messenger/MCAPI combination provides separation between the multicore application and the communications topology. MCAPI-ready functional modules are easily re-mapped to different cores, at configuration time, and the topology resources and configuration are modified and optimized, without modification of the application source code. This allows the application developer to quickly and accurately evaluate different mappings and configuration to balance performance and resource allocation.



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