Parcel Routing Feature for AGAS

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Abstract

High Performance ParalleX (HPX) is the runtime implementation of ParalleX, a new model of computation targeting future generation of High Performance Computers. HPX implements Active Global Address Space (AGAS) as a means for global addressing scheme. This allows us to view distributed systems as a globally unified (memory) system. Local Control Objects (LCOs) provides the means of synchronization and controlling of userlevel PX-threads. Parcels are units of communication HPX features, that are used for remote communication as well as coordination of remote computation.

AGAS, in HPX,is responsible for knowing an object's location during its lifetime. When parcel is to be sent to a remote locality(conventional physical node), the address of the remote locality is resolved by asking the AGAS server. In this poster presentation, we highlight a performance gain due to implementation of added feature in AGAS being able to forward a parcel directly to the locality in context, rather than the reqeusting locality sending the parcel after it gets the resolved address from the AGAS server.