

Title: Next Generation Multicore Systems - An Architectural Outlook

Abstract:

The rapid development in VLSI technology allowed billions of transistors to be integrated on a single chip which led to the integration of multiple cores on a single integrated circuit. Network on Chip (NoC) is the most scalable and fault tolerant communication infrastructure in multicore systems. NoC replaces the dedicated point-to-point bus based communication between cores by employing a grid of routers connected via communication links. NoC routers are intelligent devices that are responsible for routing a packet from its source to the destination. Inter router links connect the routers in the network and Network Interface Card (NIC) separates the computation part of a core from the communication part. The talk covers the architecture for next generation multicore systems with a special focus to super-scalar processors, on chip cache organizations and communication mechanisms of such chips.