The Homogeneity of Architecture in a Heterogeneous world

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Abstract. It has long been accepted within embedded computing that using a heterogeneous core focused to a specific task can deliver improved performance and subsequent improved power efficiency. The challenge has always been how can the software programmer integrate this hardware diversity as workloads become generalized or often unknown at design time? Using library abstraction permits specific tasks to benefit from heterogeneity, but how can general purpose code benefit? This talk will describe the hardware and software techniques currently being developed in next generation ARM based SoC to address the challenge of maintaining the homogeneity of the software architecture while extending to the benefits of heterogeneity in hardware.

Biography

John Goodacre, Director, Program Management, ARM Processor Division. John joined ARM in February 2002 and took responsibility for their platform architecture. Today he is Director of Program Management focused on various programs around the application processors technology roadmap including the definition and market development of the ARM MPCore multicore processor technology. Prior to working at ARM, he specialized in enterprise software having worked for Microsoft for 5 years, firstly as Group Program Manager in the Exchange Server group and latterly as the manager of a team developing mobile phones software. Graduating from the University of York with a BSc in Computer Science, John has over 20 years experience of realizing new technologies in the engineering industry.

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