

عنوان مقاله:

A New Fuzzy Input Selection Technique to Increase Routing Efficiency for Network-On-Chip

محل انتشار:

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خلاصه مقاله:

The performance of Network-On-Chip(NOC) largely depends on the underlying routing techniques. A routing technique has two constituencies: output selection and input selection. This paper focuses on the improvement of input selection part. Two traditional input selections have been used in NOC, First-Come-First-Served (FCFS) input selection and Round-Robin input selection. Also, recently a contention-aware input selection (CAIS) technique has been presented for NOC, But there is some problem and defects in this technique. In this paper we eliminate the problems and defects of CAIS technique to develop a simple yet effective input selection technique named FCAIS. When there are contentions of multiple input channels competing for the same output channel, FCAIS decides which input channel obtains the access depending on the two parameters :contention level of the upstream switches and AGE of the all input channels. In this scheme each switch selects one of the input channels with highest priority, which is calculated by a fuzzy controller. The simulation results with different traffic patterns show that FCAIS can achieves better performance than the FCFS and CAIS input selections, when combined with either deterministic or adaptive .output selection

کلمات کلیدی:

Network-On-Chip, Routing, Input Selection, Fuzzy Control System

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