

OS noise Analysis on Azalea-unikernel

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Abstract— Operating System noise is a well-known problem that occurs mainly in large-scale systems running HPC application, and it also limits performance scalability. In order to reduce OS noise occurring in a general-purpose OS, different design approached kernels like micro-kernel and lightweight kernel are studied. Recently unikernel optimized for application program has been studied. The purpose of this paper is to measure OS noise in unikernel. We compared OS noise of Linux, general-purposed OS, and Azalea-unikernel, one of the unikernels. Well-known OS noise measurement benchmarks such as fixed work quanta (FTQ), fixed time quanta (FWQ), and Hourglass were used. As a result of the experiment, it was confirmed that Azalea-unikernel has less OS noise than Linux, and it also means unikernel is a kernel suitable for supporting scalability on manycore systems.

Keyword— Operating systems, OS noise, Interference, Azalea-unikernel



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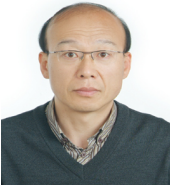
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