Evaluation of Manycore Operating Systems

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***Abstract*—these days the number of processors in computer systems is increasing in a very fast speed, and different manufacturers are producing computers with manycore processors. In turn, these manycore processor computer systems require a new operating system that can solve the problems of commodity operating systems. Commodity operating systems originally made for a single, dual or multi-cores systems; they will have lower performance and scalability problem for higher number of cores that are hundreds or thousands in number. In this regard, scholars of different research institutions are trying to develop their own solutions for existing problems among commodity operating systems and the recently emerging the manycore processor.**

This paper intends to see what those manycore operating systems are. The main objective of this paper is to compare and contrast some of manycore operating systems, analyze their experimental results, and give some summarizing concepts.

Manycore operating systems are developing either from the scratch or the amendment on the existing commodity operating systems. Operating systems projects that develop a manycore operating system from the scratch, need lots of effort, and generally new approaches are applied. They use completely new technical approaches for development of OSes for increased number of cores. Operating systems like FOS and BarrelFish are some examples of operating systems that developed from the scratch. On the other hand, some operating system projects focus on commodity OSes problems for increased number of cores. These projects amend commodity operating systems and/or used them collectively. Therefore their main task is preparing systems that play an important role for this amendment. As compared with the above operating system development approach, these approaches are simple and more manycore OSes used it. Operating systems like FusedOS, Cerberus and others are such a type of operating systems.

In this respect, this paper will see the reason behind the selection of either of the two approaches. Also will provide highlights about the basic structural differences among the existing manycore operating systems, in order to catch the philosophy behind them.

***Keyword*—ICACT2016, Manycore, operating systems, FOS, Corey, FusedOS, Cerberus, BarrelFish, PopcornLinux**

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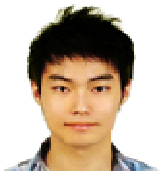

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