

## Behavior of SPEC CPU2006 Based on Optimization Levels

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**Abstract :** SPEC CPU benchmarks are used to evaluate the performance of CPUs on computer systems. In our project we are going to use SPEC CPU suite that contains several benchmarks running on two different compilers gcc and icc in different optimizations levels to evaluate the performance of a CPU. The motivation of this project is to find out which compiler and in which optimization level makes the CPU reaches the best performance. The results of that evaluation will help users of these compilers to choose the best compiler and optimization level that perform efficiently for their work. In other words, it will give users the best performance of the CPU while doing their works. This project is interesting since it will provide the method used to measure the performance of CPU and how different optimization levels of compilers can help achieve a higher performance. Moreover, it will give a good understanding of how benchmarks are used to evaluate a CPU performance. For the reader, in reality SPEC CPU benchmarks are used to measure the performance of new released CPUs to be compared to other CPUs.

**Keywords :** SPEC, CPU, GCC, ICC, copilers

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