6: Performance of Processors

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Parameter-1: The processing speed of a processor is usually measured in millions of instructions per second.=> MIPS

Parameter-2: Throughput = Number of instructions/tasks completed per second

- MIPS rating used to specify the integer computation performance of a processor.
- FLOPS and MFLOPS rating is used to specify the floating point computation per seconds
- MIPS rating does not give correct idea of processing speed of a microprocessor(For same program MIPS(RISC-P

Parameter-3: To compare processor with different clock cycle, with different instruction sets SPEC ratings may be u

- SPEC= System Performance Evaluation Committee (1989), developed industry standard benchmarks to evaluate pr
- SPECint95 : To measure integer performance (written in C)
- SPECfp95: To measure floating point performance(written in FORTRAN)

Parameter-4: For online processing applications

- TPS rating =Transaction Per Seconds
- Online applications demand rapid interactive processing for large number of relative simple transactions
- Transaction involves: database search, Query, Answering and database update operations over very large databas
- Users : Railways /Airline reservations, ATM , Wallet-payment transactions

Parameter-5: For Knowledge based Systems / AI supported System

- KLIPS rating is for knowledge based computer
- Performance is measured in kilo logical inferences per second (KLIPS)

Parameter-6: Company specific rating

- iComp : Intel's Comparative processor's performance
- It is collection of benchmarks to evaluate an index of relative performance of Intel processors

Parameter-7: For servers

- It uses FORTRAN programs for solving linear system of equations of the order of >100
- It's program contain high % of floating point operations.
- It is very sensitive to vector operation and the degree of vectorization by the computer
- It is used with specific compiler and degree of linear equations.
- It is used in MFLOPS and GFLOPS

Parameter-8: Using Synthetic testing benchmark

- Dhrystone
  - It uses integer performance
  - It's unit is Kdhrystone per second
  - It is sensitive to compilers
- Wheatstone
  - It is FORTRAN based synthetic testing benchmark
  - It measures both integer and floating point performance
  - Its program take into account array indexing, subroutine calls, parameter passing, conditional branching, trig
  - It's unit is Kwheatstone per second
  - It is sensitive to the compilers
  - It's test don not perform I/O System calls