

John Healy
12.18.2003
POS 355
Timothy H. Long

Personal Computer VS Mainframe Computer

For one to take a look at the Personal Computers (PC) of today one must also look at the mainframes of the past. The reason for this is the PCs of today can do more then the mainframes of the past. With this in mind one can only guess of the likely power the mainframes of the future will have. There are three main differences between the PC of today and the mainframes of today.

One of the biggest differences between the PC and the mainframe is raw computing power. The PC's of to day have from one to two processors and from 128 kilobytes of Random Access Memory (RAM) to about two megabytes of RAM. Now on the mainframe you can have from two processors to 128 processors and from one megabyte of RAM to one terabyte of RAM. Now with the wide range of mainframes and the differences in the processors and the RAM one can start to understand the difference between the two types of computers. The more processors and the more RAM a computer has the faster the computer becomes and this becomes raw computing power.

The second difference between the PC and the mainframe is the amount of people who can log into the computer at once. On a PC you can have at most two people at the same time logged into the computer but on a mainframe you can have thousands log into the computer at once. The reason for this big difference is a PC is intended for someone to place onto there own desk whereas a mainframe is meant to be in a larger clement controlled room with everyone logging into the mainframe through a remote terminal. The biggest reason you can have multiple people logged into a PC or to a mainframe is the amount of

processors and the amount of RAM. The more people logged into PC or mainframe the more raw power you need or the computer will be so bogged down the computer will crash.

The last major difference between the PC and the mainframe is cost. A typical PC of today will cost from about 1,000 dollars to about 10,000 dollars whereas a mainframe will cost from about 100,000 dollars to a few billion dollars. The simplest way to look at the price is to do a direct comparison to the raw computing power of the computer. The more raw computing power one has the higher the cost of the PC or the mainframe will be.

I have only listed the 3 major differences between the PC and the mainframe. The remaining differences are small and insignificant against the 3 I listed. Some of those small differences are the operation system, the amount of hard drive room, security, networking capabilities, expandability, ease of uses, and electricity requirements. It all come down to raw computing power and what the owner wants to do with the computer and the types of applications running on the computer. If a user is going to be running a office application then it should be on a PC but if the user wants to run a accelerator experiment in a software simulator and collect the data from the simulator experiment then the user needs to have a mainframe because this type of application need to be able to use a good amount of raw computing power to get a answer in a timely fashion. The more, raw computer power an application is run on the faster the person will get his answer from the experiment. Now one only has to consider how much raw computing power one would like to have on a computer.