

* 32 Bit vs. 64 Bit System.

32 Bit System & 64 Bit System are two different types of computer system architecture, with different capability & limitation. The difference between the two is :-

① **Processor Architecture** = The most significant difference between a 32 Bit System & a 64 Bit System, is the processor architecture they use. A 32 Bit system uses a 32 Bit architecture, while a 64 Bit System uses a 64 Bit architecture. This means that the processor of a 32 Bit system can handle data in 32 Bit pieces, while the processor of a 64 Bit system can handle data in 64 Bit pieces.

② **Addressable Memory** = A 32 Bit system can address up to 4GB of memory, while a 64 Bit system can address upto 16 Exabytes (EB) of memory. This means that a 64 Bit system can handle much large amount of memory than a 32 Bit system, which is useful for applications that require a lot of memory, such as video editing, scientific computing & gaming.

③ Performance = A 64 Bit System can process more data in one cycle compared to a 32 Bit System, which results in improved performance for tasks that require a lot of data processing. For example, a 64 Bit System can perform calculations with large numbers, process large images & run more complex software than 32 Bit System. However, for simple tasks, there may not be a noticeable difference in performance between the two.

④ Compatibility = A 32 Bit System can run 32 Bit softwares only, while a 64 Bit system can run 32 Bit & 64 Bit software both. However, 64 Bit software may not run on a 32 Bit System. This means that if you have old software that was designed for a 32 Bit System, you may not be able to run it on a 64 Bit System.

⑤ Security = A 64 Bit system offers enhanced security features, such as Hardware Based Data Execution Prevention (DEP), which helps prevent malicious code from executing in memory. This is because a 64 Bit system can address more memory than 32 Bit system, which means that they can use more advanced security features to protect the system.

⑥ Power consumption = A 32 Bit system uses less power compared to a 64 Bit system, as it processes data in smaller chunks. This means that 32 Bit systems may be more suitable for devices with limited Battery life, such as Laptop & Mobile devices.

In summary, the main difference between a 32 Bit system & a 64 Bit system are processor architecture, addressable memory, performance, compatibility, security & power consumption.

The choice between the two depends on the specific needs of the user, as well as the software & hardware they intend to use.