

Questions on Threads

In a scenario in which multiple tasks need to be supported concurrently, we can choose to either create processes or threads for tasks. Which of the following will create lower overhead for the OS? Select the best answer.

- A. Creating a unique process for each unique task that runs within its own execution context.
- B. Creating a different thread for each unique task that runs within its own execution context.

Which of the following is a difference between processes and threads? Select all that apply.

- A. Process creation is cheaper and faster than threads.
- B. There can be many threads within a process.
- C. Threads in the same process can communicate directly with each other by writing to the same memory location but processes communication involves the kernel.
- D. Processes has better isolation than threads and one process is less likely to corrupt another process compared to two threads.

Is the following statement true or false? Select the best answer.

In a web server, creating a thread for each new request from a client and then destroying the thread after the request has been serviced requires less overhead than maintaining a thread pool.

- A. True
- B. False

Which of the following are good uses of threads? Select all that apply.

- A. Two different applications belonging to two different users, each running in a separate thread.
- B. Web browser has several threads, each supporting a different task (e.g. image rendering, receiving requests from users, sending back HTML responses, etc.).
- C. An application that breaks up large amounts of data into small chunks for processing in parallel.

Is the following statement true or false? Select the best answer.

Context switching between user level threads is very fast, requiring only a few instructions in user space.

- A. True
- B. False

Which of the following correctly reflects the differences between kernel and user level threads?
Select the best answer.

- A. Kernel level threads are all maintained by the kernel, while user level threads are maintained in user space.
- B. Kernel level threads that make system calls will block other kernel level threads in the same process.
- C. The scheduling of both kernel level threads and user level threads can be customized by the user application.
- D. Kernel level thread creation is faster and cheaper than user level thread creation.

Is the following statement true or false?

Threads within a process share the same memory space.
(multiple choice question with ONE correct answer)

- A. True
- B. False