

MULTI THREADING MODELS IN PROCESS MANAGEMENT

Multi-threading

It is a process of multiple threads executes at same time.

Many operating systems support kernel thread and user thread in a combined way. Example of such system is Solaris.

Multi-threading model are of three types.

1. Many to many models.
2. Many to one model.
3. one to one model.

Many to Many Model

1. In this model, we have multiple user threads multiplex to same or lesser number of kernel level threads.
2. Number of kernel level threads are specific to the machine; advantage of this model is if a user thread is blocked, we can schedule others user thread to other kernel thread.
3. Thus, System doesn't block if a particular thread is blocked.
4. It is the best multi-threading model.

Many to One Model

1. In this model, we have multiple user threads mapped to one kernel thread.
2. In this model when a user thread makes a blocking system call entire process blocks.
3. As we have only one kernel thread and only one user thread can access kernel at a time, so multiple threads are not able access multiprocessor at the same time.
4. The thread management is done on the user level so it is more efficient.

One to One Model

1. In this model, one to one relationship between kernel and user thread. In this model multiple thread can run on multiple processors.
2. Problem with this model is that creating a user thread requires the corresponding kernel thread.
3. As each user thread is connected to different kernel, if any user thread makes a blocking system call, the other user threads won't be blocked.