

6.2 Life Cycle of Thread

A thread goes through various stages in its life cycle. For example, a thread is born, started, runs, and then dies. The following diagram shows the complete life cycle of a thread.

Following are the stages of the life cycle:

- **New:** A new thread begins its life cycle in the new state. It remains in this state until the program starts the thread. It is also referred to as a born thread.
- **Runnable:** After a newly born thread is started, the thread becomes runnable. A thread in this state is considered to be executing its task.
- **Waiting:** Sometimes, a thread transitions to the waiting state while the thread waits for another thread to perform a task. A thread transitions back to the runnable state only when another thread signals the waiting thread to continue executing.
- **Timed Waiting:** A runnable thread can enter the timed waiting state for a specified interval of time. A thread in this state transition back to the runnable state when that time interval expires or when the event it is waiting for occurs.
- **Terminated (Dead):** A runnable thread enters the terminated state when it completes its task or otherwise terminates.