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Defining Multithreading Terms

## Multithreaded Programming Guide

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# Defining Multithreading Terms

[Table 1-1](#) introduces some of the terms used in this book.

Table 1-1 Multithreading Terms

Term	Definition
Process	The UNIX environment (such as file descriptors, user ID, and so on) created with the fork(2) system call, which is set up to run a program.
Thread	A sequence of instructions executed within the context of a process.
pthreads (POSIX threads)	A POSIX 1003.1c compliant threads interface.
Solaris threads	A Sun Microsystems <sup>TM</sup> threads interface that is not POSIX compliant. A predecessor of pthreads.
Single- threaded	Restricting access to a single thread.
Multithreaded	Allowing access to two or more threads.
User- or Application- level threads	Threads managed by the threads library routines in user (as opposed to kernel) space.
Lightweight	Threads in the kernel that execute kernel code and system calls (also called LWPs).

processes	
Bound threads	Threads that are permanently bound to LWPs.
Unbound threads	A default Solaris thread that context switches very quickly without kernel support.
Attribute object	Contains opaque data types and related manipulation functions used to standardize some of the configurable aspects of POSIX threads, mutual exclusion locks (mutexes), and condition variables.
Mutual exclusion locks	Functions that lock and unlock access to shared data.
Condition variables	Functions that block threads until a change of state.
Counting semaphore	A memory-based synchronization mechanism.
Parallelism	A condition that arises when at least two threads are <b>executing</b> simultaneously.
Concurrency	A condition that exists when at least two threads are <b>making progress</b> . A more generalized form of parallelism that can include time-slicing as a form of virtual parallelism.

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