NAME
posixoptions – optional parts of the POSIX standard

DESCRIPTION
The POSIX standard (the information below is from POSIX.1-2001) describes a set of behaviors and interfaces for a compliant system. However, many interfaces are optional and there are feature test macros to test the availability of interfaces at compile time, and functions **sysconf**(3), **fpathconf**(3), **pathconf**(3), **confstr**(3) to do this at run time. From shell scripts one can use **getconf**(1). For more detail, see **sysconf**(3).

We give the name of the POSIX abbreviation, the option, the name of the **sysconf**() parameter used to inquire about the option, and possibly a very short description. Much more precise detail can be found in the POSIX standard itself, versions of which can nowadays be accessed freely on the web.

ADV - _POSIX_ADVISORY_INFO - _SC_ADVISORY_INFO
The following advisory functions are present:

posix_fadvise(),
posix_fallocate(),
posix_memalign(),
posix_madvise().

AIO - _POSIX_ASYNCHRONOUS_IO - _SC_ASYNCHRONOUS_IO
The header *<aio.h>* is present. The following functions are present:

aio_cancel(),
aio_error(),
aio_fsync(),
aio_read(),
aio_return(),
aio_suspend(),
aio_write(),
lio_listio().

BAR - _POSIX_BARRIERS - _SC_BARRIERS
This option implies the **_POSIX_THREADS** and **_POSIX_THREAD_SAFE_FUNCTIONS** options. The following functions are present:

pthread_barrier_destroy(),
pthread_barrier_init(),
pthread_barrier_wait(),
pthread_barrierattr_destroy(),
pthread_barrierattr_init().

--- - POSIX_CHOWN_RESTRICTED
If this option is in effect (as it always is under POSIX.1-2001) then only root may change the owner of a file, and non-root can only set the group of a file to one of the groups it belongs to. This affects the functions *chown*(), *fchown*().

CS - _POSIX_CLOCK_SELECTION - _SC_CLOCK_SELECTION
This option implies the **_POSIX_TIMERS** option. The following functions are present:

pthread_condattr_getclock(),
pthread_condattr_setclock(),
clock_nanosleep().

If **CLOCK_REALTIME** is changed by the function *clock_settime*(), then this affects all timers set for an absolute time.

CPT - _POSIX_CPUTIME - _SC_CPUTIME
The clockID CLOCK_PROCESS_CPUTIME_ID is supported. The initial value of this clock is 0 for each process. This option implies the **_POSIX_TIMERS** option. The function *clock_getcpuclockid*() is present.

--- - _POSIX_FILE_LOCKING - _SC_FILE_LOCKING
This option has been deleted. Not in final XPG6.

FSC - _POSIX_FSYNC - _SC_FSYNC
The function *fsync*() is present.

IP6 - _POSIX_IPV6 - _SC_IPV6
Internet Protocol Version 6 is supported.

--- - _POSIX_JOB_CONTROL - _SC_JOB_CONTROL
If this option is in effect (as it always is under POSIX.1-2001) then the system implements POSIX-style job control, and the following functions are present:

> *setpgid*(),
> *tcdrain*(),
> *tcflush*(),
> *tcgetpgrp*(),
> *tcsendbreak*(),
> *tcsetattr*(),
> *tcsetpgrp*().

MF - _POSIX_MAPPED_FILES - _SC_MAPPED_FILES
Shared memory is supported. The include file *<sys/mman.h>* is present. The following functions are present: *mmap*(), *msync*(), *munmap*().

ML - _POSIX_MEMLOCK - _SC_MEMLOCK
Shared memory can be locked into core. The functions *mlockall*(), *munlockall*() are present.

MR/MLR - _POSIX_MEMLOCK_RANGE - _SC_MEMLOCK_RANGE
More precisely, ranges can be locked into core. The functions *mlock*(), *munlock*() are present.

MPR - _POSIX_MEMORY_PROTECTION - _SC_MEMORY_PROTECTION
The function *mprotect*() is present.

MSG - _POSIX_MESSAGE_PASSING - _SC_MESSAGE_PASSING
The include file *<mqueue.h>* is present. The following functions are present:

> *mq_close*(),
> *mq_getattr*(),
> *mq_notify*(),
> *mq_open*(),
> *mq_receive*(),
> *mq_send*(),
> *mq_setattr*(),
> *mq_unlink*().

MON - _POSIX_MONOTONIC_CLOCK - _SC_MONOTONIC_CLOCK
CLOCK_MONOTONIC is supported. This option implies the **_POSIX_TIMERS** option. Affected functions are

> *aio_suspend*(),
> *clock_getres*(),
> *clock_gettime*(),
> *clock_settime*(),
> *timer_create*().

--- - _POSIX_MULTI_PROCESS - _SC_MULTI_PROCESS
This option has been deleted. Not in final XPG6.

--- - _POSIX_NO_TRUNC
If this option is in effect (as it always is under POSIX.1-2001) then pathname components longer than **NAME_MAX** are not truncated, but give an error. This property may be dependent on the path prefix of the component.

PIO - _POSIX_PRIORITIZED_IO - _SC_PRIORITIZED_IO
This option says that one can specify priorities for asynchronous I/O. This affects the functions

> *aio_read*(),
> *aio_write*().

PS - _POSIX_PRIORITY_SCHEDULING - _SC_PRIORITY_SCHEDULING
The include file *<sched.h>* is present. The following functions are present:

> *sched_get_priority_max*(),
> *sched_get_priority_min*(),
> *sched_getparam*(),
> *sched_getscheduler*(),
> *sched_rr_get_interval*(),
> *sched_setparam*(),
> *sched_setscheduler*(),
> *sched_yield*().

If also **_POSIX_SPAWN** is in effect, then the following functions are present:

> *posix_spawnattr_getschedparam*(),
> *posix_spawnattr_getschedpolicy*(),
> *posix_spawnattr_setschedparam*(),
> *posix_spawnattr_setschedpolicy*().

RS - _POSIX_RAW_SOCKETS
Raw sockets are supported. Affected functions are *getsockopt*(), *setsockopt*().

--- - _POSIX_READER_WRITER_LOCKS - _SC_READER_WRITER_LOCKS
This option implies the **_POSIX_THREADS** option. Conversely, under POSIX.1-2001 the **_POSIX_THREADS** option implies this option.
The following functions are present:

> *pthread_rwlock_destroy*(),
> *pthread_rwlock_init*(),
> *pthread_rwlock_rdlock*(),
> *pthread_rwlock_tryrdlock*(),
> *pthread_rwlock_trywrlock*(),
> *pthread_rwlock_unlock*(),
> *pthread_rwlock_wrlock*(),
> *pthread_rwlockattr_destroy*(),
> *pthread_rwlockattr_init*().

RTS - _POSIX_REALTIME_SIGNALS - _SC_REALTIME_SIGNALS
Realtime signals are supported. The following functions are present:

> *sigqueue*(),
> *sigtimedwait*(),
> *sigwaitinfo*().

--- - _POSIX_REGEXP - _SC_REGEXP
      If this option is in effect (as it always is under POSIX.1-2001) then POSIX regular expressions are sup-
      ported and the following functions are present:

            regcomp(),
            regerror(),
            regexec(),
            regfree().

--- - _POSIX_SAVED_IDS - _SC_SAVED_IDS
      If this option is in effect (as it always is under POSIX.1-2001) then a process has a saved set-user-ID and a
      saved set-group-ID. Affected functions are

            exec(),
            kill(),
            seteuid(),
            setegid(),
            setgid(),
            setuid().

SEM - _POSIX_SEMAPHORES - _SC_SEMAPHORES
      The include file *<semaphore.h>* is present. The following functions are present:

            sem_close(),
            sem_destroy(),
            sem_getvalue(),
            sem_init(),
            sem_open(),
            sem_post(),
            sem_trywait(),
            sem_unlink(),
            sem_wait().

SHM - _POSIX_SHARED_MEMORY_OBJECTS - _SC_SHARED_MEMORY_OBJECTS
      The following functions are present:

            mmap(),
            munmap(),
            shm_open(),
            shm_unlink().

--- - _POSIX_SHELL - _SC_SHELL
      If this option is in effect (as it always is under POSIX.1-2001), the function *system*() is present.

SPN - _POSIX_SPAWN - _SC_SPAWN
      This option describes support for process creation in a context where it is difficult or impossible to use
      fork(), for example, because no MMU is present. If **_POSIX_SPAWN** is in effect, then the include file
      <spawn.h> and the following functions are present:

            posix_spawn(),
            posix_spawn_file_actions_addclose(),
            posix_spawn_file_actions_adddup2(),
            posix_spawn_file_actions_addopen(),
            posix_spawn_file_actions_destroy(),
            posix_spawn_file_actions_init(),
            posix_spawnattr_destroy(),
            posix_spawnattr_getsigdefault(),

>   *posix_spawnattr_getflags*(),
>   *posix_spawnattr_getpgroup*(),
>   *posix_spawnattr_getsigmask*(),
>   *posix_spawnattr_init*(),
>   *posix_spawnattr_setsigdefault*(),
>   *posix_spawnattr_setflags*(),
>   *posix_spawnattr_setpgroup*(),
>   *posix_spawnattr_setsigmask*(),
>   *posix_spawnp*().
>   If also **_POSIX_PRIORITY_SCHEDULING** is in effect, then the following functions are present:

>   *posix_spawnattr_getschedparam*(),
>   *posix_spawnattr_getschedpolicy*(),
>   *posix_spawnattr_setschedparam*(),
>   *posix_spawnattr_setschedpolicy*().

SPI - _POSIX_SPIN_LOCKS - _SC_SPIN_LOCKS
>   This option implies the **_POSIX_THREADS** and **_POSIX_THREAD_SAFE_FUNCTIONS** options. The following functions are present:

>   *pthread_spin_destroy*(),
>   *pthread_spin_init*(),
>   *pthread_spin_lock*(),
>   *pthread_spin_trylock*(),
>   *pthread_spin_unlock*().

SS - _POSIX_SPORADIC_SERVER - _SC_SPORADIC_SERVER
>   The scheduling policy **SCHED_SPORADIC** is supported. This option implies the **_POSIX_PRIOR-ITY_SCHEDULING** option. Affected functions are

>   *sched_setparam*(),
>   *sched_setscheduler*().

SIO - _POSIX_SYNCHRONIZED_IO - _SC_SYNCHRONIZED_IO
>   Affected functions are *open*(), *msync*(), *fsync*(), *fdatasync*().

TSA - _POSIX_THREAD_ATTR_STACKADDR - _SC_THREAD_ATTR_STACKADDR
>   Affected functions are

>   *pthread_attr_getstack*(),
>   *pthread_attr_getstackaddr*(),
>   *pthread_attr_setstack*(),
>   *pthread_attr_setstackaddr*().

TSS - _POSIX_THREAD_ATTR_STACKSIZE - _SC_THREAD_ATTR_STACKSIZE
>   Affected functions are

>   *pthread_attr_getstack*(),
>   *pthread_attr_getstacksize*(),
>   *pthread_attr_setstack*(),
>   *pthread_attr_setstacksize*().

TCT - _POSIX_THREAD_CPUTIME - _SC_THREAD_CPUTIME
>   The clockID CLOCK_THREAD_CPUTIME_ID is supported. This option implies the **_POSIX_TIMERS** option. Affected functions are

>   *pthread_getcpuclockid*(),
>   *clock_getres*(),

> *clock_gettime*(),
> *clock_settime*(),
> *timer_create*().

TPI - _POSIX_THREAD_PRIO_INHERIT - _SC_THREAD_PRIO_INHERIT
   Affected functions are

> *pthread_mutexattr_getprotocol*(),
> *pthread_mutexattr_setprotocol*().

TPP - _POSIX_THREAD_PRIO_PROTECT - _SC_THREAD_PRIO_PROTECT
   Affected functions are

> *pthread_mutex_getprioceiling*(),
> *pthread_mutex_setprioceiling*(),
> *pthread_mutexattr_getprioceiling*(),
> *pthread_mutexattr_getprotocol*(),
> *pthread_mutexattr_setprioceiling*(),
> *pthread_mutexattr_setprotocol*().

TPS - _POSIX_THREAD_PRIORITY_SCHEDULING - _SC_THREAD_PRIORITY_SCHEDULING
   If this option is in effect, the different threads inside a process can run with different priorities and/or differ-
   ent schedulers. Affected functions are

> *pthread_attr_getinheritsched*(),
> *pthread_attr_getschedpolicy*(),
> *pthread_attr_getscope*(),
> *pthread_attr_setinheritsched*(),
> *pthread_attr_setschedpolicy*(),
> *pthread_attr_setscope*(),
> *pthread_getschedparam*(),
> *pthread_setschedparam*(),
> *pthread_setschedprio*().

TSH - _POSIX_THREAD_PROCESS_SHARED - _SC_THREAD_PROCESS_SHARED
   Affected functions are

> *pthread_barrierattr_getpshared*(),
> *pthread_barrierattr_setpshared*(),
> *pthread_condattr_getpshared*(),
> *pthread_condattr_setpshared*(),
> *pthread_mutexattr_getpshared*(),
> *pthread_mutexattr_setpshared*(),
> *pthread_rwlockattr_getpshared*(),
> *pthread_rwlockattr_setpshared*().

TSF - _POSIX_THREAD_SAFE_FUNCTIONS - _SC_THREAD_SAFE_FUNCTIONS
   Affected functions are

> *readdir_r*(),
> *getgrgid_r*(),
> *getgrnam_r*(),
> *getpwnam_r*(),
> *getpwuid_r*(),
> *flockfile*(),
> *ftrylockfile*(),
> *funlockfile*(),

       getc_unlocked(),
       getchar_unlocked(),
       putc_unlocked(),
       putchar_unlocked(),
       rand_r(),
       strerror_r(),
       strtok_r(),
       asctime_r(),
       ctime_r(),
       gmtime_r(),
       localtime_r().

TSP - _POSIX_THREAD_SPORADIC_SERVER - _SC_THREAD_SPORADIC_SERVER
    This option implies the **_POSIX_THREAD_PRIORITY_SCHEDULING** option. Affected functions are

       sched_getparam(),
       sched_setparam(),
       sched_setscheduler().

THR - _POSIX_THREADS - _SC_THREADS
    Basic support for POSIX threads is available. The following functions are present:

       pthread_atfork(),
       pthread_attr_destroy(),
       pthread_attr_getdetachstate(),
       pthread_attr_getschedparam(),
       pthread_attr_init(),
       pthread_attr_setdetachstate(),
       pthread_attr_setschedparam(),
       pthread_cancel(),
       pthread_cleanup_push(),
       pthread_cleanup_pop(),
       pthread_cond_broadcast(),
       pthread_cond_destroy(),
       pthread_cond_init(),
       pthread_cond_signal(),
       pthread_cond_timedwait(),
       pthread_cond_wait(),
       pthread_condattr_destroy(),
       pthread_condattr_init(),
       pthread_create(),
       pthread_detach(),
       pthread_equal(),
       pthread_exit(),
       pthread_getspecific(),
       pthread_join(),
       pthread_key_create(),
       pthread_key_delete(),
       pthread_mutex_destroy(),
       pthread_mutex_init(),
       pthread_mutex_lock(),
       pthread_mutex_trylock(),
       pthread_mutex_unlock(),
       pthread_mutexattr_destroy(),
       pthread_mutexattr_init(),
       pthread_once(),

pthread_rwlock_destroy(),
pthread_rwlock_init(),
pthread_rwlock_rdlock(),
pthread_rwlock_tryrdlock(),
pthread_rwlock_trywrlock(),
pthread_rwlock_unlock(),
pthread_rwlock_wrlock(),
pthread_rwlockattr_destroy(),
pthread_rwlockattr_init(),
pthread_self(),
pthread_setcancelstate(),
pthread_setcanceltype(),
pthread_setspecific(),
pthread_testcancel().

TMO - _POSIX_TIMEOUTS - _SC_TIMEOUTS
The following functions are present:

mq_timedreceive(),
mq_timedsend(),
pthread_mutex_timedlock(),
pthread_rwlock_timedrdlock(),
pthread_rwlock_timedwrlock(),
sem_timedwait(),
posix_trace_timedgetnext_event().

TMR - _POSIX_TIMERS - _SC_TIMERS
The following functions are present:

clock_getres(),
clock_gettime(),
clock_settime(),
nanosleep(),
timer_create(),
timer_delete(),
timer_gettime(),
timer_getoverrun(),
timer_settime().

TRC - _POSIX_TRACE - _SC_TRACE
POSIX tracing is available. The following functions are present:

posix_trace_attr_destroy(),
posix_trace_attr_getclockres(),
posix_trace_attr_getcreatetime(),
posix_trace_attr_getgenversion(),
posix_trace_attr_getmaxdatasize(),
posix_trace_attr_getmaxsystemeventsize(),
posix_trace_attr_getmaxusereventsize(),
posix_trace_attr_getname(),
posix_trace_attr_getstreamfullpolicy(),
posix_trace_attr_getstreamsize(),
posix_trace_attr_init(),
posix_trace_attr_setmaxdatasize(),
posix_trace_attr_setname(),
posix_trace_attr_setstreamsize(),

> *posix_trace_attr_setstreamfullpolicy*(),
> *posix_trace_clear*(),
> *posix_trace_create*(),
> *posix_trace_event*(),
> *posix_trace_eventid_equal*(),
> *posix_trace_eventid_get_name*(),
> *posix_trace_eventid_open*(),
> *posix_trace_eventtypelist_getnext_id*(),
> *posix_trace_eventtypelist_rewind*(),
> *posix_trace_flush*(),
> *posix_trace_get_attr*(),
> *posix_trace_get_status*(),
> *posix_trace_getnext_event*(),
> *posix_trace_shutdown*(),
> *posix_trace_start*(),
> *posix_trace_stop*(),
> *posix_trace_trygetnext_event*().

TEF - _POSIX_TRACE_EVENT_FILTER - _SC_TRACE_EVENT_FILTER
This option implies the **_POSIX_TRACE** option. The following functions are present:

> *posix_trace_eventset_add*(),
> *posix_trace_eventset_del*(),
> *posix_trace_eventset_empty*(),
> *posix_trace_eventset_fill*(),
> *posix_trace_eventset_ismember*(),
> *posix_trace_get_filter*(),
> *posix_trace_set_filter*(),
> *posix_trace_trid_eventid_open*().

TRI - _POSIX_TRACE_INHERIT - _SC_TRACE_INHERIT
Tracing children of the traced process is supported. This option implies the **_POSIX_TRACE** option. The following functions are present:

> *posix_trace_attr_getinherited*(),
> *posix_trace_attr_setinherited*().

TRL - _POSIX_TRACE_LOG - _SC_TRACE_LOG
This option implies the **_POSIX_TRACE** option. The following functions are present:

> *posix_trace_attr_getlogfullpolicy*(),
> *posix_trace_attr_getlogsize*(),
> *posix_trace_attr_setlogfullpolicy*(),
> *posix_trace_attr_setlogsize*(),
> *posix_trace_close*(),
> *posix_trace_create_withlog*(),
> *posix_trace_open*(),
> *posix_trace_rewind*().

TYM - _POSIX_TYPED_MEMORY_OBJECTS - _SC_TYPED_MEMORY_OBJECT
The following functions are present:

> *posix_mem_offset*(),
> *posix_typed_mem_get_info*(),
> *posix_typed_mem_open*().

--- - _POSIX_VDISABLE
>   Always present (probably 0). Value to set a changeable special control character to indicate that it is disabled.

XOPEN EXTENSIONS
>   **_XOPEN_CRYPT**, **_XOPEN_LEGACY**, **_XOPEN_REALTIME**, **_XOPEN_REAL-TIME_THREADS**, **_XOPEN_UNIX**.

SEE ALSO
>   **sysconf**(3), **standards**(7)

COLOPHON
>   This page is part of release 3.22 of the Linux *man-pages* project. A description of the project, and information about reporting bugs, can be found at http://www.kernel.org/doc/man-pages/.