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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'sched_setparam.3p' command

\$ man sched_setparam.3p

SCHED_SETPARAM(3P) POSIX Programmer's Manual SCHED_SETPARAM(3P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

sched_setparam ? set scheduling parameters (REALTIME)

SYNOPSIS

```
#include <sched.h>

int sched_setparam(pid_t pid, const struct sched_param *param);
```

DESCRIPTION

The sched_setparam() function shall set the scheduling parameters of the process specified by pid to the values specified by the sched_param structure pointed to by param. The value of the sched_priority member in the sched_param structure shall be any integer within the inclusive priority range for the current scheduling policy of the process specified by pid. Higher numerical values for the priority represent higher priorities. If the value of pid is negative, the behavior of the sched_setparam() function is unspecified.

If a process specified by pid exists, and if the calling process has permission, the scheduling parameters shall be set for the process whose process ID is equal to pid.

If `pid` is zero, the scheduling parameters shall be set for the calling process.

The conditions under which one process has permission to change the scheduling parameters of another process are implementation-defined.

Implementations may require the requesting process to have appropriate privileges to set its own scheduling parameters or those of another process.

See `Scheduling Policies` for a description on how this function affects the scheduling of the threads within the target process.

If the current scheduling policy for the target process is not `SCHED_FIFO`, `SCHED_RR`, or `SCHED_SPORADIC`, the result is implementation-defined; this case includes the `SCHED_OTHER` policy.

The specified `sched_ss_repl_period` shall be greater than or equal to the specified `sched_ss_init_budget` for the function to succeed; if it is not, then the function shall fail.

The value of `sched_ss_max_repl` shall be within the inclusive range `[1, {SS_REPL_MAX}]` for the function to succeed; if not, the function shall fail. It is unspecified whether the `sched_ss_repl_period` and `sched_ss_init_budget` values are stored as provided by this function or are rounded to align with the resolution of the clock being used.

This function is not atomic with respect to other threads in the process. Threads may continue to execute while this function call is in the process of changing the scheduling policy for the underlying kernel-scheduled entities used by the process contention scope threads.

RETURN VALUE

If successful, the `sched_setparam()` function shall return zero.

If the call to `sched_setparam()` is unsuccessful, the priority shall remain unchanged, and the function shall return a value of -1 and set `errno` to indicate the error.

ERRORS

The `sched_setparam()` function shall fail if:

EINVAL One or more of the requested scheduling parameters is outside the range defined for the scheduling policy of the specified

pid.

EPERM The requesting process does not have permission to set the scheduling parameters for the specified process, or does not have appropriate privileges to invoke `sched_setparam()`.

ESRCH No process can be found corresponding to that specified by pid.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

None.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

Scheduling Policies, `sched_getparam()`, `sched_getscheduler()`, `sched_setscheduler()`

The Base Definitions volume of POSIX.1?2017, <sched.h>

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