

**NAME**

**p\_candebug** - determine debuggability of a process

**SYNOPSIS**

```
#include <sys/param.h>
```

```
#include <sys/proc.h>
```

```
int
```

```
p_candebug(struct thread *td, struct proc *p);
```

**DESCRIPTION**

This function determines if a given process *p* is debuggable by some thread *td*.

The following sysctl(8) variables directly influence the behaviour of **p\_candebug()**:

*security.bsd.unprivileged\_proc\_debug*

Must be set to a non-zero value to allow unprivileged processes access to the kernel's debug facilities.

*kern.securelevel*

Debugging of the init process is not allowed if this variable is 1 or greater.

Other such variables indirectly influence it; see *cr\_bsd\_visible*(9).

**RETURN VALUES**

The **p\_candebug()** function returns 0 if the process denoted by *p* is debuggable by thread *td*, or a non-zero error return value otherwise.

**ERRORS**

- |         |  |
|---------|--|
| [EPERM] | An unprivileged process attempted to debug another process but the system is configured to deny it (see sysctl(8) variable <i>security.bsd.unprivileged_proc_debug</i> above).       |
| [ESRCH] | Thread <i>td</i> has been jailed and the process to debug does not belong to the same jail or one of its sub-jails, as determined by <i>prison_check</i> (9).                        |
| [ESRCH] | <i>cr_bsd_visible</i> (9) denied visibility according to the BSD security policies in force.   |
| [EPERM] | Thread <i>td</i> lacks superuser credentials and its (effective) group set is not a superset of process <i>p</i> 's whole group set (including real, effective and saved group IDs). |

- [EPERM] Thread *td* lacks superuser credentials and its (effective) user ID does not match all user IDs of process *p*.
- [EPERM] Thread *td* lacks superuser credentials and process *p* is executing a set-user-ID or set-group-ID executable.
- [EPERM] Process *p* denotes the initial process **initproc()** and the sysctl(8) variable *kern.securelevel* is greater than zero.
- [EBUSY] Process *p* is in the process of being **exec()**'ed.
- [EPERM] Process *p* denied debuggability (see procctl(2), command PROC\_TRACE\_CTL).

**SEE ALSO**

prison\_check(9), mac(9), cr\_bsd\_visible(9), procctl(2), p\_cansee(9)