Rocky Enterprise Linux 9.2 Manual Pages on command 'personality.2'

$ man personality.2

PERSONALITY(2)   Linux Programmer's Manual   PERSONALITY(2)

NAME

    personality - set the process execution domain

SYNOPSIS

    #include <sys/personality.h>

    int personality(unsigned long persona);

DESCRIPTION

    Linux supports different execution domains, or personalities, for each process. Among

    other things, execution domains tell Linux how to map signal numbers into signal actions.

    The execution domain system allows Linux to provide limited support for binaries compiled

    under other UNIX-like operating systems.

    If persona is not 0xffffffff, then personality() sets the caller's execution domain to the

    value specified by persona. Specifying persona as 0xffffffff provides a way of retrieving

    the current persona without changing it.

    A list of the available execution domains can be found in <sys/personality.h>. The execu?

    tion domain is a 32-bit value in which the top three bytes are set aside for flags that

    cause the kernel to modify the behavior of certain system calls so as to emulate histori?

    cal or architectural quirks. The least significant byte is a value defining the personal?

    ity the kernel should assume. The flag values are as follows:

    ADDR_COMPAT_LAYOUT (since Linux 2.6.9)

        With this flag set, provide legacy virtual address space layout.

    ADDR_NO_RANDOMIZE (since Linux 2.6.12)

        With this flag set, disable address-space-layout randomization.

ADDR_LIMIT_32BIT (since Linux 2.2)

    Limit the address space to 32 bits.

ADDR_LIMIT_3GB (since Linux 2.4.0)

    With this flag set, use 0xc0000000 as the offset at which to search a virtual mem‐

    ory chunk on mmap(2); otherwise use 0xffffe000.

FDPIC_FUNCPTRS (since Linux 2.6.11)

    User-space function pointers to signal handlers point (on certain architectures) to

    descriptors.

MMAP_PAGE_ZERO (since Linux 2.4.0)

    Map page 0 as read-only (to support binaries that depend on this SVr4 behavior).

READ_IMPLIES_EXEC (since Linux 2.6.8)

    With this flag set, PROT_READ implies PROT_EXEC for mmap(2).

SHORT_INODE (since Linux 2.4.0)

    No effects(?).

STICKY_TIMEOUTS (since Linux 1.2.0)

    With this flag set, select(2), pselect(2), and ppoll(2) do not modify the returned

    timeout argument when interrupted by a signal handler.

UNAME26 (since Linux 3.1)

    Have uname(2) report a 2.6.40+ version number rather than a 3.x version number.

    Added as a stopgap measure to support broken applications that could not handle the

    kernel version-numbering switch from 2.6.x to 3.x.

WHOLE_SECONDS (since Linux 1.2.0)

    No effects(?).

The available execution domains are:

PER_BSD (since Linux 1.2.0)

    BSD. (No effects.)

PER_HPUX (since Linux 2.4)

    Support for 32-bit HP/UX. This support was never complete, and was dropped so that

    since Linux 4.0, this value has no effect.

PER_IRIX32 (since Linux 2.2)

    IRIX 5 32-bit. Never fully functional; support dropped in Linux 2.6.27.   Implies

    STICKY_TIMEOUTS.

PER_IRIX64 (since Linux 2.2)

IRIX 6 64-bit. Implies STICKY_TIMEOUTS; otherwise no effects.

PER_IRIXN32 (since Linux 2.2)

IRIX 6 new 32-bit. Implies STICKY_TIMEOUTS; otherwise no effects.

PER_ISCR4 (since Linux 1.2.0)

Implies STICKY_TIMEOUTS; otherwise no effects.

PER_LINUX (since Linux 1.2.0)

Linux.

PER_LINUX32 (since Linux 2.2)

[To be documented.]

PER_LINUX32_3GB (since Linux 2.4)

Implies ADDR_LIMIT_3GB.

PER_LINUX_32BIT (since Linux 2.0)

Implies ADDR_LIMIT_32BIT.

PER_LINUX_FDPIC (since Linux 2.6.11)

Implies FDPIC_FUNCPTRS.

PER_OSF4 (since Linux 2.4)

OSF/1 v4. On alpha, clear top 32 bits of iov_len in the user's buffer for compati?

bility with old versions of OSF/1 where iov_len was defined as. int.

PER_OSR5 (since Linux 2.4)

Implies STICKY_TIMEOUTS and WHOLE_SECONDS; otherwise no effects.

PER_RISCOS (since Linux 2.2)

[To be documented.]

PER_SCOSVR3 (since Linux 1.2.0)

Implies STICKY_TIMEOUTS, WHOLE_SECONDS, and SHORT_INODE; otherwise no effects.

PER_SOLARIS (since Linux 2.4)

Implies STICKY_TIMEOUTS; otherwise no effects.

PER_SUNOS (since Linux 2.4.0)

Implies STICKY_TIMEOUTS. Divert library and dynamic linker searches to

/usr/gnemul.   Buggy, largely unmaintained, and almost entirely unused; support was

removed in Linux 2.6.26.

PER_SVR3 (since Linux 1.2.0)

Implies STICKY_TIMEOUTS and SHORT_INODE; otherwise no effects.

PER_SVR4 (since Linux 1.2.0)

Implies STICKY_TIMEOUTS and MMAP_PAGE_ZERO; otherwise no effects.

PER_UW7 (since Linux 2.4)

Implies STICKY_TIMEOUTS and MMAP_PAGE_ZERO; otherwise no effects.

PER_WYSEV386 (since Linux 1.2.0)

Implies STICKY_TIMEOUTS and SHORT_INODE; otherwise no effects.

PER_XENIX (since Linux 1.2.0)

Implies STICKY_TIMEOUTS and SHORT_INODE; otherwise no effects.

RETURN VALUE

On success, the previous persona is returned. On error, -1 is returned, and errno is set

appropriately.

ERRORS

EINVAL The kernel was unable to change the personality.

VERSIONS

This system call first appeared in Linux 1.1.20 (and thus first in a stable kernel release

with Linux 1.2.0); library support was added in glibc 2.3.

CONFORMING TO

personality() is Linux-specific and should not be used in programs intended to be porta?

ble.

SEE ALSO

setarch(8)

COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the

project, information about reporting bugs, and the latest version of this page, can be

found at https://www.kernel.org/doc/man-pages/.

Linux   2017-09-15   PERSONALITY(2)