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 exe‐

    cution 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/person‐

    ality.h>. The execution 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 historical or archi‐ tectural quirks. The least significant byte is a value defining the personality 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 memory chunk on mmap(2); otherwise use 0xffffe000.

FDPIC_FUNCPTRS (since Linux 2.6.11)

  User-space function pointers to signal handlers point (on cer‐ tain 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 sig‐ nal 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 ef?
    fects.

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 compatibility 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; other‐
wise 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 al‐
most 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 ef‐
fects.

PER_UW7 (since Linux 2.4)

Implies STICKY_TIMEOUTS and MMAP_PAGE_ZERO; otherwise no ef‐
fects.

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 re‐
turned, 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 portable.

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/.

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