NAME

getrusage − get resource usage

SYNOPSIS

```
#include <sys/time.h>
#include <sys/resource.h>

int getrusage(int who, struct rusage *usage);
```

DESCRIPTION

getrusage() returns resource usage measures for *who*, which can be one of the following:

RUSAGE_SELF
Return resource usage statistics for the calling process, which is the sum of resources used by all threads in the process.

RUSAGE_CHILDREN
Return resource usage statistics for all children of the calling process that have terminated and been waited for. These statistics will include the resources used by grandchildren, and further removed descendants, if all of the intervening descendants waited on their terminated children.

RUSAGE_THREAD (since Linux 2.6.26)
Return resource usage statistics for the calling thread.

The resource usages are returned in the structure pointed to by *usage*, which has the following form:

```
struct rusage {
  struct timeval ru_utime; /* user time used */
  struct timeval ru_stime; /* system time used */
  long   ru_maxrss;        /* maximum resident set size */
  long   ru_ixrss;         /* integral shared memory size */
  long   ru_idrss;         /* integral unshared data size */
  long   ru_isrss;         /* integral unshared stack size */
  long   ru_minflt;        /* page reclaims */
  long   ru_majflt;        /* page faults */
  long   ru_nswap;         /* swaps */
  long   ru_inblock;       /* block input operations */
  long   ru_oublock;       /* block output operations */
  long   ru_msgsnd;        /* messages sent */
  long   ru_msgrcv;        /* messages received */
  long   ru_nsignals;      /* signals received */
  long   ru_nvcsw;         /* voluntary context switches */
  long   ru_nivcsw;        /* involuntary context switches */
};
```

RETURN VALUE

On success, zero is returned. On error, −1 is returned, and *errno* is set appropriately.

ERRORS

EFAULT
usage points outside the accessible address space.

EINVAL
who is invalid.

CONFORMING TO

SVr4, 4.3BSD. POSIX.1-2001 specifies **getrusage**(), but only specifies the fields *ru_utime* and *ru_stime*.

RUSAGE_THREAD is Linux-specific.

NOTES

Resource usage metrics are preserved across an **execve**(2).

Including <*sys/time.h*> is not required these days, but increases portability. (Indeed, *struct timeval* is defined in <*sys/time.h*>.)

In Linux kernel versions before 2.6.9, if the disposition of **SIGCHLD** is set to **SIG_IGN** then the resource usages of child processes are automatically included in the value returned by **RUSAGE_CHILDREN**, although POSIX.1-2001 explicitly prohibits this. This non-conformance is rectified in Linux 2.6.9 and later.

The structure definition shown at the start of this page was taken from 4.3BSD Reno. Not all fields are meaningful under Linux. In Linux 2.4 only the fields *ru_utime*, *ru_stime*, *ru_minflt*, and *ru_majflt* are maintained. Since Linux 2.6, *ru_nvcsw* and *ru_nivcsw* are also maintained.

See also the description of */proc/PID/stat* in **proc**(5).

SEE ALSO

clock_gettime(2), **getrlimit**(2), **times**(2), **wait**(2), **wait4**(2), **clock**(3)

COLOPHON

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